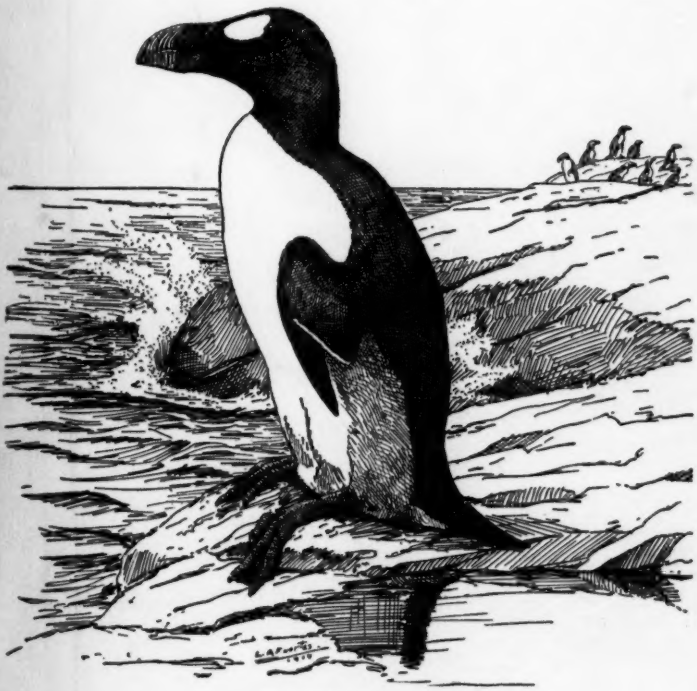
Old Series, Vol. XLVIII. } Continuation of the Bulletin of the Nuttall Ornithological Club { New Series, Vol. XL.

The Auk

A Quarterly Journal of Ornithology

EDITOR
WITMER STONE



VOLUME XL

PUBLISHED BY

The American Ornithologists' Union

LANCASTER, PA.
1923

Entered as second-class mail matter in the Post Office at Lancaster, Pa.

JAN 17 1923

IENCE LIBRARY

Old Series, Vol. XLVII

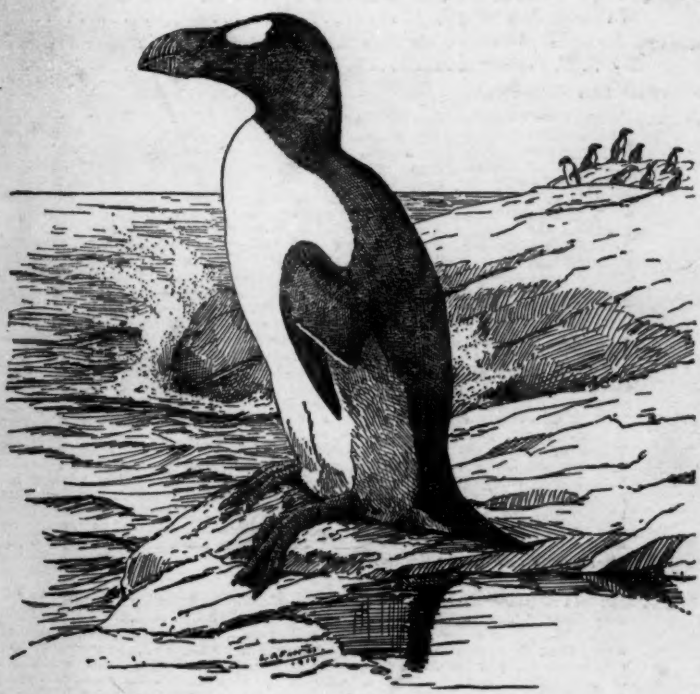
CONTINUATION OF THE BULLETIN OF THE NUTTALL ORNITHOLOGICAL CLUB

New Series, Vol. XXXIX

The Auk

A Quarterly Journal of Ornithology

Vol. XL JANUARY, 1923 No. 1



PUBLISHED BY

The American Ornithologists' Union

LANCASTER, PA.

Entered as second-class mail matter in the Post Office at Lancaster, Pa.

CONTENTS

THE BLACK-CROWNED NIGHT HERON. By *Alfred O. Gross*. (Plates I and II) 1

NOTES ON THE SHORT-EARED OWL. By *Charles A. Urner* 30

A STUDY OF THE NESTING OF MOURNING DOVES. By *Margaret M. Nice*. (Concluded.) 37

A REVISION OF THE GENUS CYANOCOMPSA. By *W. E. Clyde Todd* 58

FIELD STUDIES OF THE ANATIDAE OF THE ATLANTIC COAST. By *Ludlow Griscom*. (Concluded.) 69

NOTES ON THE FORMS OF THE GENUS OREORTYX BAIRD. By *Harry C. Oberholser* 80

A BREEDING STATION OF THE HORNED LARK AND PIPIT ON THE GASPÉ PENINSULA. By *Charles W. Townsend*. (Plate III) 85

A NEW SUBSPECIES OF THE LITTLE BLACK RAIL. By *Henry K. Coale*. (Plate IV) 88

DESCRIPTION OF A NEW CLAPPER RAIL FROM THE COLORADO RIVER VALLEY. By *Donald R. Dickey* 90

SUPPLEMENTARY NOTES ON THE BIRDS OF DUTCHESS COUNTY, N. Y. By *Maunsell S. Crosby* 94

FORTIETH STATED MEETING OF THE AMERICAN ORNITHOLOGIST'S UNION. By *T. S. Palmer* 100

REPORT OF THE SECRETARY. By *T. S. Palmer* 115

GENERAL NOTES.—Notes on the Diving of Loons, 119; King Eider in Maine, 120; The Replete Angler, 120; Whooping Crane in Nebraska, 121; Yellow-crowned Night Heron in Pennsylvania, 121; An Interesting Adaptation, 121; Natal Plumage of Belonopterus cayennensis, 122; Golden Plover in Cape May County, New Jersey, 122; An Instance of Extreme Precocity in Young Pheasants, 123; The Barn Owl in Washington State, 123; Long-eared Owl at Ipswich, Mass., in Summer, 124; The Saw-whet Owl in Spring at Philadelphia, Pa., 124; An Owl's Egg in the Nest of a Western Red-tailed Hawk, 125; First Authentic Capture of the Manx Shearwater in North America, 125; The Eastern Kingbird in Western Washington, 125; Prairie Horned Lark (Otocoris alpestris praticola) in Maryland in Summer, 126; Doctor Suckley on the Magpie versus Livestock, 126; Raven at Elizabeth, N. J.—A Withdrawal, 127; Cowbird-like Behaviour of Red-winged Blackbird, 127; The Glossy Cowbird (*Molothrus atronitens*) in Barbados, 128; Evening Grosbeaks in Maine, 129; The Evening Grosbeak in Wisconsin, 130; The Evening Grosbeak near Washington, D. C., 130; The Standing of the Lapland Longspur in Maine, 131; Nelson's Sparrow in Chicago, 132; LeConte's Sparrow near Chicago, a Correction, 132; Vermivora leucobronchialis in Venezuela, 132; A Third South Carolina Record for the Bay-breasted Warbler (*Dendroica castanea*), 133; Wintering of the Yellow Palm Warbler at Prattville, Ala., 133; Grinnell's Water-Thrush in Colorado, 133; Rock Wren in Minnesota, 133; Bewick's Wren (*Thryomanes bewicki bewicki*) on the Coast of South Carolina, 134; Present Status of the Carolina Wren near Washington, D. C., 134; Thrush Killed by Red Squirrel, 135; Additional Notes on Birds of the Labrador Peninsula, 135; Rare and Unusual Birds in the Chicago Area during 1922, 138; Notes from Waukesha County, Wis., 137; Notes from Elizabeth, N. J., 140; Additional Notes on the Birds of Eastern Kentucky, 143; Summer Shore Birds of the North Carolina Coast, 144; Some Biloxi, Mississippi, Bird Notes, 146; The Type of the Genus Colymbus, 147.

RECENT LITERATURE.—Bent's 'Life Histories of North American Petrels and Pelicans and their Allies,' 149; Sachtleben on the Birds of Lithuania, 150; Schalow's 'Ornithology of Brandenburg,' 151; Rowan on Bird Life at Shoal Lake, Manitoba, 151; Bannerman's 'Birds of Southern Nigeria,' 152; Bannerman on African Cuckoos, 152; Aves for 1920, 152; Forbush on Some Underwater Activities of Waterfowl, 153; Forbush's 'Annual Report on Massachusetts Ornithology,' 154; Witherby's 'Handbook of British Birds,' 155; Mathews' 'The Birds of Australia,' 155; Recent Papers by Prof. Stephens, 156; Van Oort's 'Birds of the Netherlands,' 156; Ribeiro's Vertebrate Fauna of Trinidad Island, 156; Murphy on Birds of the Peruvian Coast, 157; McAtee on Local Suppressions of Pests by Birds, 157; Bangs and Barbour on Birds from Darien, 157; Check List of the Birds of Illinois, 158; Chapin on the Genus Steganura, 159; Chapman on the Bird Department of the American Museum, 159; McGregor on New and Noteworthy Philippine Birds, 160; Wetmore on Bird Remains from Haiti, 160; Oberholser on Timaline Birds from the East Indies, 160; Economic Ornithology in Recent Entomological Publications, 161; The Predaceous Enemies of Ants, 162; Reestablishment and Value of the Buff-backed Heron, 162, The Ornithological Journals, 163; Ornithological Articles in Other Journals, 171.

CORRESPONDENCE.—Generic Subdivision 177; The Cuckoo's Egg Laying, 181.

NOTES AND NEWS.—Editing of 'The Auk', 182; Obituary: Charles M. Carter, 183; George Zenker, 184; Inland Bird Banding Association, 185; Phillips 'Natural History of the Ducks,' 185; Todd's 'Birds of Santa Marta,' 185; Some Notes from the Records of the New England Bird Banding Association, 186; Ornithology in Popular Journals, 189.

Gen.
Wahr

OFFICERS OF THE AMERICAN ORNITHOLOGISTS' UNION PAST AND PRESENT.

PRESIDENTS.

*J. A. Allen, 1883–1890.
*D. G. Elliot, 1890–1892.
*Elliott Coues, 1892–1895.
*William Brewster, 1895–1898.
Robert Ridgway, 1898–1900.
C. Hart Merriam, 1900–1903.
*Chas. B. Cory, 1903–1905.
Chas. F. Batchelder, 1905–1908.
E. W. Nelson, 1908–1911.
Frank M. Chapman, 1911–1914.
A. K. Fisher, 1914–1917.
John H. Sage, 1917–1920.
Witmer Stone, 1920–

VICE-PRESIDENTS.

*Elliott Coues, 1883–1890.
Robert Ridgway, 1883–1891; 1895–1898.
*William Brewster, 1890–1895.
H. W. Henshaw, 1891–1894; 1911–1918.
C. Hart Merriam, 1894–1900.
*Chas. B. Cory, 1898–1903.
Chas. F. Batchelder, 1900–1905.
E. W. Nelson, 1903–1905.
Frank M. Chapman, 1905–1911.
A. K. Fisher, 1908–1914.
Witmer Stone, 1914–1920.
George Bird Grinnell, 1918–
Jonathan Dwight, 1920–

SECRETARIES.

C. Hart Merriam, 1883–1889.
John H. Sage, 1889–1917.
T. S. Palmer, 1917–

TREASURERS.

C. Hart Merriam, 1883–1885.
*Chas. B. Cory, 1885–1887.
*William Dutcher, 1887–1903.
Jonathan Dwight, 1903–1920.
W. L. McAtee, 1920–

* Deceased.

MEMBERS OF THE COUNCIL.

*J. A. Allen, 1883–1921.
*S. F. Baird, 1883–1887.
*William Brewster, 1883–1919.
Montague Chamberlain, 1883–1888,
*Elliott Coues, 1883–1899.
*H. W. Henshaw, 1883–1894; 1911–1918.
*George N. Lawrence, 1883–1890.
C. Hart Merriam, 1883–
Robert Ridgway, 1883–
*Chas. B. Cory, 1885–1895; 1896–1921.
*William Dutcher, 1887–1920.
*D. G. Elliot, 1887–1915.
Leonhard Stejneger, 1887–1895; 1896–1899.
*Thomas McIlwraith, 1888–1889.
John H. Sage, 1889–
*N. S. Goss, 1890–1891.
Chas. F. Batchelder, 1891–
Frank M. Chapman, 1894–
*Charles E. Bendire, 1895–1897.
A. K. Fisher, 1895–
Jonathan Dwight, 1896–
Ruthven Deane, 1897–
Witmer Stone, 1898–
Thomas S. Roberts, 1899–
E. W. Nelson, 1900–
C. W. Richmond, 1903–
F. A. Lucas, 1905–1921.
W. H. Osgood, 1911–1918, 1920–
Joseph Grinnell, 1914–
T. S. Palmer, 1917–
Harry C. Oberholser, 1918–
Geo. Bird Grinnell, 1918–
W. L. McAtee, 1920–
Arthur C. Bent, 1921–

Officers are ex-officio members of the Council during their terms of office and ex-presidents are members for life. Ex-officio members are included in the above.

*Deceased.

Elections have been in November except in 1883 and 1884 (September), 1887 and 1922 (October), 1907 and 1909 (December), 1914 (April) and 1915 (May).

CONTENTS OF VOLUME XL.

NUMBER I.

PAGE

THE BLACK-CROWNED NIGHT HERONS OF SANDY NECK. By *Alfred O. Gross.* (Plates I and II) 1

NOTES ON THE SHORT-EARED OWL. By *Charles A. Urner* 30

A STUDY OF THE NESTING OF MOURNING DOVES. By *Margaret M. Nice.* (Concluded.) 37

A REVISION OF THE GENUS CYANOCOMPSA. By *W. E. Clyde Todd* . . 58

FIELD STUDIES OF THE ANATIDAE OF THE ATLANTIC COAST. By *Ludlow Griscom.* (Concluded.) 69

NOTES ON THE FORMS OF THE GENUS OREORTYX BAIRD. By *Harry C. Oberholser* 80

A BREEDING STATION OF THE HORNED LARK AND PIPIT ON THE GASPÉ PENINSULA. By *Charles W. Townsend.* (Plate III) 85

A NEW SUBSPECIES OF THE LITTLE BLACK RAIL. By *Henry K. Coale.* (Plate IV) 88

DESCRIPTION OF A NEW CLAPPER RAIL FROM THE COLORADO RIVER VALLEY. By *Donald R. Dickey.* 90

SUPPLEMENTARY NOTES ON THE BIRDS OF DUTCHESS COUNTY, N. Y. By *Maunsell S. Crosby.* 94

FORTIETH STATED MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION. By *T. S. Palmer.* 106

REPORT OF THE SECRETARY. By *T. S. Palmer* 115

GENERAL NOTES.

Notes on the Diving of Loons, 119; King Eider in Maine, 120; The Replete Angler, 120; Whooping Crane in Nebraska, 121; Yellow-crowned Night Heron in Pennsylvania, 121; An Interesting Adaptation, 121; Natal Plumage of Belonopterus cayennensis, 122; Golden Plover in Cape May County, New Jersey, 122; An Instance of Extreme Precocity in Young Pheasants, 123; The Barn Owl in Washington State, 123; Long-eared Owl at Ipswich, Mass., in Summer, 124; The Saw-whet Owl in Spring at Philadelphia, Pa., 124; An Owl's Egg in the Nest of a Western Red-tailed Hawk, 125; First Authentic Capture of the Manx Shearwater in North America, 125; The Eastern Kingbird in Western Washington, 125; Prairie Horned Lark (Otocoris alpestris praticola) in Maryland in Summer, 126; Doctor Suckley on the Magpie versus Livestock, 126; Raven at Elizabeth, N. J.—A Withdrawal, 127; Cowbird-like Behavior of Red-winged Blackbird, 127; The Glossy Cowbird (*Molothrus atronitens*) in Barbados, 128; Evening Grosbeaks in Maine, 129; The Evening Grosbeak in Wisconsin, 130; The Evening Grosbeak near Washington, D. C., 130; The Standing of the Lapland

Longspur in Maine, 131; Nelson's Sparrow in Chicago, 132; LeConte's Sparrow near Chicago, a Correction, 132; Vermivora leucobronchialis in Venezuela, 132; A Third South Carolina Record for the Bay-breasted Warbler (*Dendroica castanea*), 133; Wintering of the Yellow Palm Warbler at Prattville, Ala., 133; Grinnell's Water-Thrush in Colorado, 133; Rock Wren in Minnesota, 133; Bewick's Wren (*Thryomanes bewicki bewicki*) on the Coast of South Carolina, 134; Present Status of the Carolina Wren near Washington, D. C., 134; Thrush Killed by Red Squirrel, 135; Additional Notes on Birds of the Labrador Peninsula, 135; Rare and Unusual Birds in the Chicago Area during 1922, 138; Notes from Waukesha County, Wis., 137; Notes from Elizabeth, N. J., 140; Additional Notes on the Birds of Eastern Kentucky, 143; Summer Shore Birds of the North Carolina Coast, 144; Some Biloxi, Mississippi, Bird Notes, 146; The Type of the Genus Colymbus, 147.

RECENT LITERATURE.

Bent's 'Life Histories of North American Petrels and Pelicans and their Allies,' 149; Sachtleben on the Birds of Lithuania, 150; Schalow's 'Ornithology of Brandenburg,' 151; Rowan on Bird Life at Shoal Lake, Manitoba, 151; Bannerman's 'Birds of Southern Nigeria,' 152; Bannerman on African Cuckoos, 152; Aves for 1920, 152; Forbush on Some Underwater Activities of Waterfowl, 153; Forbush's 'Annual Report of Massachusetts Ornithology,' 154; Witherby's 'Handbook of British Birds,' 155; Mathews' 'The Birds of Australia,' 155; Recent Papers by Prof. Stephens, 156; Van Oort's 'Birds of the Netherlands,' 156; Ribeiro's 'Vertebrate Fauna of Trinidad Island,' 156; Murphy on Birds of the Peruvian Coast, 157; McAtee on Local Suppressions of Pests by Birds, 157; Bangs and Barbour on Birds from Darien, 157; Check List of the Birds of Illinois, 158; Chapin on the Genus Steganura, 159; Chapman on the Bird Department of the American Museum, 159; McGregor on New and Noteworthy Philippine Birds, 160; Wetmore on Bird Remains from Haiti, 160; Oberholser on Timaline Birds from the East Indies, 160; Economic Ornithology in Recent Entomological Publications, 161; The Predaceous Enemies of Ants, 162; Reestablishment and Value of the Buff-backed Heron, 162; The Ornithological Journals, 163; Ornithological Articles in Other Journals, 171.

CORRESPONDENCE.

Generic Subdivision, 177; The Cuckoo's Egg Laying, 181.

NOTES AND NEWS.

Editing of 'The Auk,' 182; Obituary: Charles M. Carter, 183; George Zenker, 184; Inland Bird Banding Association, 185; Phillips' 'Natural History of the Ducks,' 185; Todd's 'Birds of Santa Marta,' 185; Some Notes from the Records of the New England Bird Banding Association, 186; Ornithology in Popular Journals, 189.

NUMBER II.

PAGE

THE BLACK-CROWNED NIGHT HERONS OF SANDY NECK. By *Alfred O. Gross.* (Plates V–XIV). 191

NOTES ON DONACOBIUS. By *Ludlow Griscom.* 214

NOTES ON THE BIRDS OF PORCHER ISLAND, B. C. By *Allan Brooks.* . 217

SOME ASPECTS OF THE GROUP HABIT AMONG BIRDS. By *Charles L. Whittle.* 224

THE MOURNING DOVE (ZENAIDURA MACROURA CAROLINENSIS) AT PANORA, IOWA. By *L. L. Snyder.* (Plate XV). 240

REMARKS ON METHODS IN MEASURING BIRDS. By (*Mrs.*) *Elsie M. B. Reichenberger.* 244

BIRD BANDING AND BIRD MIGRATION WORK AT ROSSITTEN ON THE BALTIC SEA. By *Theodor G. Ahrens.* 247

THE CONNECTICUT VALLEY—A HIGHWAY OF MIGRATION. By *Aaron C. Bagg.* (Plates XVI–XVII). 256

BLUE FEATHERS. By *Wilder D. Bancroft, Emile M. Chamot, Ernest Merritt* and *Clyde M. Mason.* 275

TWO NEW BIRDS FROM NICARAGUA. By *Wharton Huber.* 300

ROUGH NOTES ON THE AVIFAUNA OF PAITA, PERU. By *G. E Verrill.* . 303

DESCRIPTION OF TWO APPARENTLY NEW FORMS OF AEGITHALOS CAUDATUS FROM JAPAN AND KOREA. By *Nagamichi Kuroda.* . 312

NESTING OF THE EVENING GROSBEAK IN NORTHERN MICHIGAN. By *J. Stokley Ligon.* (Plate XVIII). 314

GENERAL NOTES.

Little Auk at Sand Bridge, Southeastern Virginia, 317; Razor-billed Auk in North Carolina, 317; Double-crested Cormorant at Waterford, N. Y., 317; Field Identification of Ducks, 317; Blue Geese Alighting in Northern Ohio, 318; Subdivisions of the Little Black Rail, 319; Some Wisconsin Shore-bird Records, 318; Dr. Blagden on the Heath Hen, 321; Bobwhite (*Colinus virginianus virginianus*) Increasing in Ohio, 323; An Additional Record for the Extinct Porto Rican Quail-Dove, 324; Turkey Vultures in Alberta, 324; The Gyrfalcon in Wisconsin, 325; What is Buteo rufescentior Salvin and Godman?, 325; Richardson's Owl (*Cryptoglaux funerea richardsoni*) in Cohasset, Mass., 325; Richardson's Owl in Michigan, 326; Notes on the Generic Name Pteroptochos Kittlitz, 326; The Generic Name Euscarthmus Wied, 327; Crows Building in Low Willows, 327; The Mynah—A Study in Adaptation, 328; Spinus pinus macropterus, an Addition to the A. O. U. 'Check-List,' 330; Nesting of the Junco (*Junco hyemalis hyemalis*) in Southern Connecticut, 330; A Dickcissel in Rhode Island in Winter, 330; Pseudospermestes not a Valid Genus, 331; The Tree Swallow (*Iridoprocne bicolor*) Affected by Sudden Cold, 332; Northern Shrike (*Lanius borealis*) near Sante Fe, N. Mex., 333; Phyllanthus czarnikowi O-Grant Synonymous with P. dorffi (Sharpe), 333; Another Calaveras Warbler in Colorado, 334; Mocking-bird in Winter, Lake Co., Ohio, 334; The identity of Gmelin's Todus

plumbeus, 334; Red-breasted Nuthatch (*Sitta canadensis*) Breeding on Long Island, 335; Notes on New York Birds, 336; Notes from St. Lawrence Co., N. Y., 337; Notes from Sault Ste. Marie, Mich., 337; Some Notes on Rare Michigan Birds, 338; Some 1922 Records of Birds of the Madison, Wisconsin Territory, 339; Two Unusual Winter Records for the Chicago Area, 340; Red Squirrel Eating Young Hairy Woodpecker, 340; Note on Bonaparte's Continuation of Wilson's Ornithology, 341.

RECENT LITERATURE.

Todd and Carriker on the Birds of Santa Marta, 342; Beebe's 'A Monograph of the Pheasants,' 344; Dr. Phillips' 'Natural History of the Ducks,' 346; A Hand List of Japanese Birds, 348; Mathews' 'The Birds of Australia,' 349; Mrs. Myers' 'Western Birds,' 350; Van Oort's 'Birds of the Netherlands,' 350; Hartley's 'The Importance of Bird Life,' 351; White's 'Check-List of the Birds of New Hampshire,' 352; Chisholm's 'Mateship with Birds,' 352; Bretscher on Bird Migration in Central Europe, 353; Todd on New Finches and Tanagers from Tropical America, 354; Friedmann on Weaving of the Red-bellied Weaver Bird, 354; Cherrie and Reichenberger on New South American Birds, 355; Dwight on a New Gull, 355; Todd on South American Forms of Myiarchus, 355; Extracts from the Diary of Otto Widmann, 355; Figgins' 'Additional Notes on Branta canadensis,' 356; Abbott's 'What Comes from What,' 356; The Ornithological Journals, 357; Ornithological Articles in other Journals, 368; Publications on Bird Protection, 370.

CORRESPONDENCE.

Generic Subdivision.—The Genus Debased, 371; A Plea for Caution in Use of Trinomials, 375.

NOTES AND NEWS.

Obituaries: Walter Bradford Barrows, 376; Justice Job Barnard, 377; William Bowen Boulton, 378; Baird Centenary, 378; Preservation of the Heath Hen, 379; Annual Meeting New England Bird Banding Association, 379; Personal Mention, Alexander Wetmore, 380; Natureland, 380; Annual Meeting Delaware Valley Ornithological Club, 380; Personal Mention, Harry Malleis, 381; 'The Cardinal,' 381; Annual Meeting Baird Ornithological Club, 381; Types of Australian Birds, 381.

NUMBER III.

PAGE

THE SHORT-EARED OWL AS A FOSTER-MOTHER. By *Alexander D. DuBois.* (Plates XIX–XXII). 383

NOTABLE MIGRANTS NOT SEEN AT OUR ARIZONA BIRD TABLE. By *Florence Merriam Bailey.* (Plate XXIII). 393

REASON AND INSTINCT IN BIRD MIGRATION. By *N. F. Leopold, Jr.* . 409

ARRIVAL OF BIRDS IN RELATION TO SUNSPOTS. By *Ralph E. DeLury.* 414
A NOTE ON THE ECONOMIC STATUS OF THE BALD EAGLE IN ALASKA. By *Edward D. Crabb.* 419
A BREWSTER'S WARBLER AND HIS BROOD. By *T. Donald Carter* and *R. H. Howland.* (Plate XXIV). 423
NOTES ON A PURPLE MARTIN COLONY. By *G. Fred Ziegler, Jr.* . . . 431
BIRD BANDING AS AN AID TO THE STUDY OF MIGRATION. By *Harry C. Oberholser.* 436
BIRD BANDING AT THOMASVILLE, GA., 1923. By *T. E. Musselman.* (Plates XXV–XXVII). 442
NOTES ON THE NESTING BIRDS OF NORTHERN SANTA FE COUNTY, NEW MEXICO. By *J. K. Jensen.* (Plates XXVIII–XXIX). . 452
OBSERVATIONS ON THE BIRD LIFE OF PORTO RICO. By *Parke H. Struthers.* 469
NOTES ON SUMMER BIRDS OF THE MAMIE LAKE REGION, WISCONSIN. By *Hartley H. T. Jackson.* (Plates XXX). 478
THE BIRDS OF WELLINGTON AND WATERLOO COUNTIES, ONTARIO. By *J. Dewey Soper.* 489
EIGHTEENTH SUPPLEMENT TO THE AMERICAN ORNITHOLOGISTS' UNION CHECK-LIST OF NORTH AMERICAN BIRDS. 513

GENERAL NOTES.

Notes on the Diving of Loons and Ducks, 525; Western Grebe in Illinois, 526; The Glaucous Gull at Ithaca, N. Y., 526; Concerning the Field Identification of the Anatidae, 526; Ducks useful in Arkansas as Scavengers of Red Rice, 527; The Harlequin Duck in Massachusetts, 528; Occurrence of the Barnacle Goose on Long Island, 528; Snow Goose in the Cayuga Lake Basin, 529; Baird's Sandpiper in Dutchess County, N. Y., with Remarks on its Identification in Life, 529; The Passenger Pigeon (*Ectopistes migratorius*) in North Carolina, 530; Mourning Dove at Cap Rouge, Quebec, 532; Breeding of the Goshawk in Massachusetts, 532; Long-eared Owls Wintering at Evansburg, Pa., 533; Pileated Woodpecker in Connecticut and New Jersey, 533; The Red-naped Sapsucker in Oklahoma, 534; Another Three-toed Woodpecker in Michigan, 534; Observations on the Habits of the Whip-poor-will, 534; Gray Kingbird (*Tyrannus dominicensis*) at Cape May, N. J., 536; The Starling in Norfolk, Va., 536; Notes on a Sparrow Roost, and the Arrival of the Starling in Wisconsin, 537; The Starling (*Sturnus vulgaris*) Breeding at Hatley, Quebec, 539; A Double Song of the Cardinal, 539; Dickcissel in Central Park, New York City, 541; Habits of the Northern Shrike in Captivity, 542; The Prothonotary Warbler at New York City, 543; Bay-breasted Warbler at Atlanta, Ga., 543; Yellow-throated Warbler again at Cape May, N. J., 543; Bewick's Wren (*Thryomanes b. bewicki*) in Clarendon Co., S. C., 544; Blue-gray Gnatcatcher in Dutchess Co., N. Y., 544; Wheatear at Godbout, Quebec, 544; Nesting of the Hermit Thrush at West Brookfield, Mass., 545; Some Unusual Occurrences in Eastern Vermont, 546; Further Notes on Lake County, Minn., Birds, 547.

RECENT LITERATURE.

Barbour's 'Birds of Cuba,' 548; Horsfield's 'Sidelights on Birds,' 549; Witherby's 'Handbook of British Birds,' 550; Lonnberg on Palaearctic Goshawks, 551; Todd on the Genus Arremonops, 551; Reports of the Roosevelt Wild Life Station, 551; Recent Papers by Bangs and Penard, 552; Griscom on New Birds, 553; Townsend on Birds collected in Lower California, 553; Mailliard on Field Work in Northern California, 553; New Argentine Birds, 553; Wetmore on Migration Records from Birds Banded at Salt Lake, Utah, 554; Chapin on African Birds, 554; Chapman on the Distribution of the Motmots, 555; Cockerell on the Plumage of Diatryma, 555; Stoner on Bird Banding and Incidental Studies, 556; Hartert et al on the Birds of Northern Africa, 556; Rothschild on Birds from Yunnan, 556; Mathews' 'The Birds of Australia,' 556; Economic Ornithology in Recent Entomological Publications, 557; Success in Prairie Tree Planting, 560; Another Insect Birds should not Eat, 560; The Ornithological Journals, 560; Ornithological Articles in Other Journals, 566.

CORRESPONDENCE.

The Heath Hen, 568; Blue Feathers, 569; Protecting Nesting Sites, 571; Up to Date Names, 571.

NOTES AND NEWS.

The A. O. U. Meeting, 572; Obituaries—James H. Langille, 572; Howard Eaton, 573; William W. Arnold, 574; A Wilson Tablet, 575; Bird Protection in Poland, 575; Bengt Berg—personal mention, 576.

NUMBER IV.

PAGE

ON THE NESTING GROUNDS OF THE SOLITARY SANDPIPER AND THE LESSER YELLOW-LEGS. By *J. Fletcher Street.* (Plates XXXI–XXXV). 577

THE INFLUENCES OF THE SOUTHWESTERN DESERTS UPON THE AVIFAUNA OF CALIFORNIA. 584

YELLOW-LEGS SKELETONS. By *John Treadwell Nichols.* 592

ON THE CLASSIFICATION OF THE ALBATROSSES, PETRELS, AND DIVING PETRELS. By *Leverett M. Loomis.* 596

RECENT EXPERIENCES WITH NESTING CATBIRDS. By *Helen Granger Whittle.* 503

NOTES ON THE NESTING OF A PAIR OF DICKCISSELS (*Spiza americana*). By *Edward D. Crabb.* 606

FURTHER OBSERVATIONS ON THE HABITS AND BEHAVIOR OF THE HERRING GULL. (Plate XXXVI). 609

THE HERRING GULLS OF LAKE CHAMPLAIN. By *Lieut. L. R. Wolfe,* U. S. A. (Plate XXXVII). 621

EXTRACTS FROM THE FIELD NOTES OF GEORGE B. SENNETT. By *Ruthven Deane.* 626

SOME OBSERVATIONS ON THE STRUTHIOUS BIRDS. By *W. Henry Sheak.* 633

GROUP VARIATION AND BIRD-SONG. By *Francis H. Allen*. 643

SOME NOTES ON THE BIRDS OF THE BRANCHPORT, N. Y., REGION IN 1922. By *Verdi Burtch*. 649

NOTES ON THE BREEDING BIRDS OF CLARK'S FORK, BONNER COUNTY, IDAHO. By *Thomas D. Burleigh*. 653

THE BREEDING BIRDS OF THE VICINITY OF BLACK BAYOU AND BIRD ISLAND, CAMERON PARISH, LOUISIANA. By *J. D. Figgins*. . . . 666

EIGHTH ANNUAL LIST OF PROPOSED CHANGES IN THE A. O. U. 'CHECK-LIST' OF NORTH AMERICAN BIRDS. By *Harry C. Oberholser*. 677

IN MEMORIAM: JOSÉ CASTULO ZELEDON. By *Robert Ridgway*. (Plate XXXVIII). 682

GENERAL NOTES.

The Sooty Shearwater (*Puffinus griseus*) on the New Jersey Coast, 689; The Sooty Shearwater in New Jersey, 689; Downy Young of the Greater Snow Goose, A Correction, 690; Piping Plover and Black Tern nesting at North Pond, Lake Ontario, 690; Breeding of Piping Plover in Lake Co., Ohio, 691; Occurrence of Buff-breasted Sandpiper in Lake Co., Ohio, 691; Whooping Crane in North Dakota, 692; Wood Ibis in New Jersey again, 692; A Nestling Red-shouldered Hawk's Hearty Meal, 693; Richardson's Owl in New York, 694; The Yellow-bellied Sapsucker in Philadelphia in August, 694; Gray Kingbird in New Jersey, 694; Further Notes on the breeding of the Starling (*Sturnus vulgaris*) at Hatley, Que., 694; Yellow-headed Blackbird in Vermont, 695; Courting Orioles and Blackbirds, from the Female Bird's Eyeview, 696; A Blue Grosbeak Family in Southern Pennsylvania, 697; Western Tanager in Texas, 698; Bay-breasted Warbler a Regular Summer Resident on Mount Monadnock, N. H., 699; Early Migratory Movements of Seiurus n. noveboracensis, 699; Short-billed Marsh Wren at Waterford, N. Y., 700; Some Recent Records for British Columbia, 700; Winter Visitors at Lawrence, Kansas, 701.

RECENT LITERATURE.

Bent's 'Life Histories of North American Wild Fowl,' 702; Preble and McAtee on the Birds of the Pribilof Islands, 703; Miss Cooke on Bird Censuses, 704; Mathews' 'Birds of Australia,' 705; Witherby's 'Handbook of British Birds,' 705; Bibliography of Austrian Ornithology, 705; Oberholser on New East Indian Birds, 706; Wetmore on New Patagonian Birds, 706; Jones on Inheritance in Pigeons and Fowls, 706; Howell on Agencies which Govern the Distribution of Life, 707; Chapman on New Formicariidae and Dendrocolaptidae, 707; Allen's 'Winter Birds—A Bird Masque,' 708; Meinertzhagen's 'Review of Oriolus, 708; Pennsylvania Audubon Bulletin, 708; The Ornithological Journals, 708; Ornithological Articles in Other Journals, 715.

CORRESPONDENCE.

Genus Neopisobia.

NOTES AND NEWS.

Bird-Lore and The Auk, 716; obituaries; John Henry Gurney, 718; William Henry Hudson, 719; John Lewis James Bonhote, 720; Eduard Bachofen von Echt, 721; Enos Abijah Mills, 721; Thomas Leo McConnell, 721; James Stirton Wallace, 722; T. Gilbert Pearson and the International Committee on Bird Protection, 722; The Williams Galapagos Expedition, 723; The Eastern Bird Banding Association, 723; Griscom's 'Birds of the New York Region,' 724.

INDEX . . . . . Page 725
ERRATA . . . . . " 758
DATES OF ISUE . . . . . " 758
OFFICERS OF THE A. O. U. PAST AND PRESENT . . . . . " i
COUNCIL OF THE A. O. U. PAST AND PRESENT . . . . . " i
CONTENTS . . . . . " i
OFFICERS AND MEMBERS . . . . . " ix

ILLUSTRATIONS.

PLATES.

I. Sandy Neck, near Barnstable, Mass. (two views).
II. Sandy Neck Rookery (two views).
III. Shickshock Mountains, Gaspe Peninsula, P. Q.
IV. Little Black Rails.
V–VII. Nests of Black-crowned Night Heron (two views ach).
VIII–XIV. Development of Young of Black-crowned Night Heron (several views each).
XV. M urning Doves (two views).
XVI–XVII. The Connecticut Valley.
XVIII. Evening Grosbeak, Nest Site and Young (two views).
XIX. Brooding Short-eared Owl.
XX–XXII. Brooding Short-eared Owl (two views each).
XXIII. Arizona Camp (three views).
XXIV. Brewster's Warbler Nest, Young and Adult (three views).
XXV–XXVIII. Bird Banding at Thomasville, Ga. (two views each).
XXVIII–XXIX. Landscapes, Santa Fé Co., N. Mex. (two views each).
XXX. Spring Lake Wisc. and Nest of Loon (two views).
XXXI–XXXII. Nesting of the Solitary Sandpiper (two views each).
XXXIII–XXXV. Nesting of the Lesser Yellow-legs (two views each).
XXXVI. Captive Herring Gulls and Gull Cage (two views.)
XXXVII. Nest of Herring Gull (two views) and nest site of Tree Swallow, Lake Champlain.
XXXVIII. José C. Zeledón.

TEXT CUTS.

Map of Mamie Lake Region, Wisconsin. . . . . Page 479
Double Song of the Cardinal. . . . . " 540
Chart of Classification of Tubinares. . . . . " 597

THE AUK:

A QUARTERLY JOURNAL OF

ORNITHOLOGY.

VOL. XL. JANUARY, 1923. No. 1

THE BLACK-CROWNED NIGHT HERON (NYCTICORAX NYCTICORAX NAEVIUS) OF SANDY NECK.

BY ALFRED O. GROSS.

Plates I and II.

INTRODUCTION.

WHEN one looks across Barnstable Bay, Massachusetts, from the low-lying hills which border the beautiful highway of Cape Cod between Barnstable and Yarmouth, he can see Sandy Neck, a long arm of sand dunes stretching off to the north and east into Cape Cod Bay for a distance of several miles. The eastern end of this neck is marked by a lighthouse which guards the entrance of Barnstable Bay and which has guided the fishermen's boats up the channel for more than a hundred years. As you follow the barren sandy waste to the westward the eye is attracted by the rugged contour of a series of high wind-swept hills, the glistening white sand of which stands out in striking contrast with the dark green of the pitch pines clustered among the dunes. Located in these pines is one of the largest colonies of Black-crowned Night Herons in America. This colony may be approached from the west via West Barnstable, but by far the best and most convenient way is to secure a boat at Yarmouthport and take the refreshing sail across Barnstable Bay to the group of summer homes nestled

F. P.

around the lighthouse. If you cross at low tide you gain a striking impression of the miles of salt marshes, the feeding grounds par excellence of the Herons. As the boat thugs along the narrow channel out of Yarmouthport you may see the Bitterns stalking in the tall grass and out in the more open places and even on the exposed mud flats, dozens of Night Herons and an occasional Green Heron so busily engaged in their feeding operations that they give no heed to the boat or the noise of the engine. As you approach the lighthouse you are greeted by the shrill cries of Terns and you may see hundreds of Gulls rising as a cloud from their feeding grounds.

It was my good fortune to be able to secure a most attractive cottage camp owned by a well-known fisherman of the Cape, Mr. Shirley Lovell, to whom I am greatly indebted for many courtesies received during my stay at Sandy Neck. The first week of my visit was made doubly enjoyable by having as guests, Mr. Herbert K. Job and Rev. William C. Prentiss of New Haven, Connecticut, and Dr. Philip H. Pope of Reed College. Mr. Job, a representative of the National Association of Audubon Societies, secured a valuable series of motion pictures of this most interesting of all Night Heron colonies.

According to the accounts of the fishermen, the Herons were inhabiting the trees of Sandy Neck when the lighthouse was established over a century ago, and doubtless the ancestors of these birds were rearing their young among the sand dunes long before the Pilgrims landed at Provincetown and settled at Plymouth. Though the Herons have inhabited this place for such a long time the location of the colony is continually shifting. In the past ten years the birds, because of fires, cutting of trees or other disturbances have, according to Mr. Lovell, changed their nesting sites three times. The present location is near the north shore of the "Neck" about two and a half miles from the lighthouse. There is no road, not even a trail which leads from the camp to the colony, so it is necessary to pick your way over the sand dunes or else choose the longer but better way around the beach of the north shore. These barren and seemingly desolate sand dunes over which I made my daily journey did not lack in objects of interest to the biologist. Even the unattractive surroundings

of the camp did not discourage several birds which became my intimate companions during the summer. A Barn Swallow built her nest under the eaves of my porch and successfully reared her brood of young. In masses of sea-weed lodged among tufts of beach-grass not more than one hundred yards from the camp were three nests of the Spotted Sandpiper. Two of these nests when found contained four eggs each, and the other had the unusual set of eight, probably the eggs of two females. A nest with four eggs of the Piping Plover was discovered by the lighthouse keeper on June 29, and during July it was an almost daily experience to see the downy young of the Plovers and Sandpipers running over the sand and being cared for by the solicitious parents, who devised every means and cunning to lure one away, and who dared any danger to protect their young.

In June the dull gray tones of the barren sands were enriched by the golden yellow blossoms of innumerable tufts and patches of the beach heather (*Hudsonia tomentosa*). In places sheltered from the winds and the shifting sands there was an abundance of coarse beach-grass and on the lower levels, especially near the salt water, the tufts of grass were intermingled with luxuriant clusters of purple blossoms of the beach pea (*Lathyrus maritimus*). In July the mats of heather became brown, but the loss of the bright June blossoms was then replaced by myriads of golden asters (*Chrysopsis falcata*) which sprung up like magic among the waving blades of grass. After walking about a mile over the scantily clad sand dunes to the westward, in the direction of the Heron colony, you meet with rather large areas of bayberry and beach plum, many of which are interwoven with an impenetrable tangle of woodbine and poison ivy. A nest and four eggs of the Catbird were found in one of the smaller clusters of bayberry and doubtless other birds, such as Brown Thrashers, Yellow-throats, Kingbirds, Song Sparrows and Red-winged Blackbirds, which were always in evidence about this shrubbery, were nesting nearby in similar situations.

There were numerous small fresh water ponds and cranberry bogs in the hollows among the dunes which provided an ideal breeding place for Fowler's toad, as well as for myriads of troublesome mosquitoes. The toads and larvae were freely used by the

Herons and it was not an uncommon sight to see several beautifully plumed birds standing at the edge of one of the pools all primed for the unsuspecting prey.

The north beach, a course often chosen for the walk to and from the Heron colony, was strewn with numerous shipwrecks. The skeleton of a large boat cast on the shore by a storm about ten years ago, is almost opposite the Heron colony and served as a guide in readily locating the colony when approaching it from Cape Cod Bay. There is one wreck, not more than twenty years old, which is almost covered with sand and is now more than a hundred yards from high tide mark. The lighthouse when it was first built stood at the extreme end of the "Neck," but it is now a long distance inland. This all gives us evidence of the plastic nature of the Neck and of the ever-changing nature of its contour.

On certain days, at the proper stage of the tide, thousands of Herring Gulls and Terns and many Laughing and Black-backed Gulls found the mud flats on the north shore, which at low tide extended out into the bay for about two miles, a favorite fishing ground. At low ebb, at most any time of the day, but especially at night, the Herons patronized these flats in large numbers. Though the Herons found much here to interest them, it was the extensive grassy salt-marshes of Barnstable Bay that have determined the presence and continued prosperity of the immense heronry at Sandy Neck.

Long before the colony is reached its location may be readily ascertained, not only by the Herons flying to and from the nests, but also by the incessant din of innumerable calls of young and old birds. Mounting one of the high sand dunes overlooking the tops of the trees, you gain an inspiring view of the many beautiful black and white birds, which in the sunshine stand out so prominently in outline against the dark background of the pines. The number of birds seen from such a view is impressive, but it is not until you have lived among the birds for weeks and have had a chance to examine every one of the inhabited pines that you can appreciate the really large number of Herons. A census, the details of which are given in a subsequent section of this paper, reveals that there were not less than nine thousand five hundred individuals in this Night Heron metropolis. The results of an

intensive study of this unusual heronry made at the height of the breeding season during June and July, 1920, constitute the major part of the subject material of this paper, but studies made at various colonies in Illinois and in Maine are also included. The author has made free use of correspondence and has quoted liberally from many of the excellent published papers and notes written by observers in different sections of America in order to assemble the essential and interesting features in the Life History of the Black-crowned Night Heron.

NAMES.

A conspicuous and striking bird, such as the Black-crowned Night Heron, is destined to be the recipient of numerous common names. In the north and in localities where it is not to be confused with the Yellow-crowned Night Heron it is frequently called the Night or the American Night Heron. In places where the bird is abundant the layman, if he does not know a recognized name, may devise one and make use of some striking characteristic habit or note of the bird, or else some feature of its anatomy. One of the most widely used common names is 'Quawk,' which, when properly pronounced and accented is an imitation of one of the calls of the adult Heron. There are numerous variations of this same name—in Maine[1] and in various states of the Middle West[2, 3] it is 'Squawk,' at Sandy Neck the fishermen call it 'Quark' and in other localities it is 'Quak,'[4] 'Quaw-bird,'[5] 'Qua-bird'[1, 3, 6, 7, 14] and 'Kwah-bird.'[14] If you speak about the Black-crowned Night Heron to any fisherman along the New England coast, he will generally give you a blank stare, but if you mention the name 'Quawk' or something like it he brightens up and tells you many interesting things about this bird.

In the Middle West, the names 'Night Raven'[3, 6, 8] and 'Lake Owl'[8] are used because of its nocturnal habits, and in Florida, for

[1] Knight, O. W., 1908, Birds of Maine, p. 134.
[2] Barrows, W. B., 1912, Michigan Bird Life, p. 146.
[3] Jones, Lynds, 1903, The Birds of Ohio, p. 56.
[4] Woodruff, F. M., 1907, Birds of Chicago Area, p. 56.
[5] Stone, W., 1913, Auk, vol. 30, p. 336.
[6] Widmann, O., 1907, A Prem. Cat. of the Birds of Missouri, p. 55.
[7] Butler, A. W., 1897, The Birds of Indiana, p. 666.
[8] Anderson, R. M., 1907, The Birds of Iowa, p. 200.

similar reasons the natives dub it the 'Night Scrooglin.'[9] In certain localities of Georgia, it is given the rather appropriate name of 'Red Eye.'[10] Dr. Charles Wendell Townsend[11] states that the Ipswich gunners call this Heron the 'Dispar Goose.' Apparently this name is very local, for I have never met with it and Dr. Townsend states he has never known it to be applied to this bird elsewhere.

Audubon wrote, that in South Carolina this Heron was called 'Indian Pullet,' in lower Louisiana 'Gross-bec,' and in east Florida it was generally recognized as the 'Indian Hen.' Maynard[12] states that in eastern North America the name 'Gobly-gossit' was frequently applied to this bird. In the Hawaian Islands the adult is known as the 'Auku Kohili' and the young as 'Auku' or 'Speckled Heron.'[13] In the West Indies Islands it is variously known as 'Dry Heron,' 'Golden,' 'Guinea Hen' and 'Spotted Heron.' The latter names are applied to the first and second year birds which have the streaked plumage.

GEOGRAPHICAL RANGE.

The Black-crowned Night Heron (*Nycticorax nycticorax naevius*) of America, differs from that of Europe only subspecifically. The genus may be considered cosmopolitan, as it is represented in all parts of the world where conditions for Herons are favorable.

In America, the northern range of the sub-species *naevius* extends from Nova Scotia,[1] New Brunswick,[2, 3] Quebec,[4, 5, 10] Ontario,[4, 6, 8, 11, 12] and Manitoba,[4, 7] to British Columbia.[9] Not

Notes to "Names."

[9] Baynard, O. E., 1913, Auk, vol. 30, p. 243.
[10] Wright, A. H. and Harper, F., 1913, Auk, vol. 30, p. 503.
[11] Townsend, C. W., 1905, Birds of Essex County, pp. 156–158.
[12] Maynard, C. J., 1882, Birds of Eastern North America, p. 417.
[13] Bryan, W. A., 1901, Auk, vol. 18, p. 385.
[14] Chamberlain, M., 1897, Nuttall's Ornithology, p. 92.

Notes to "Geographical Range."

[1] Downs, A., 1887, Catalogue of Birds of Nova Scotia.
[2] Chamberlain, M., 1887, A Catalogue of Canadian Birds.
[3] Philipp, P. B. and Bowdish, B. S., 1919, Auk, vol. 36, p. 37.
[4] Macoun, J., 1900, Catalogue of Canadian Birds, p. 134.
[5] Mousley, H., 1918, Auk, vol. 35, p. 85. Ibid p. 297.
[6] Fleming, J. H., 1901, Auk, vol. 18, p. 36.
[7] Seton, E. T., 1909, Fauna of Manitoba, p. 491.
[8] Watson, C. W., 1920, Bird Lore, vol. 22, p. 98.

all of the records above necessarily define a northern breeding range of the Night Heron for it is well known that these birds may make long and erratic flights north from their nesting sites especially at the close of the breeding season. There are however nesting records from the following places which establish at least approximately the northern limits of the breeding range: New Brunswick (?),[3] Quebec,[4, 16] Ontario,[4, 20] Manitoba [4, 7, 19] South Dakota,[18] Wyoming,[17] Oregon,[13, 14] and Washington (?).[15]

There are innumerable records of its breeding southward throughout North America.[21]

MIGRATION.

In our southern states where the Black-crowned Night Heron is represented by individuals throughout the year the first nests are built during the month of March. In Florida the first nests may usually be found the first week of March, which is according to Mr. O. E. Baynard,[1] a much earlier date than that of the nesting time of other species of Herons. The earliest record in Mississippi as recorded by Mr. O. R. Stockard[2] is March 21, 1895, and the latest May 11, 1897.

The vanguard of the Night Herons in the Spring migration usually reaches New England during the first week of April but there are occasional records of daring individuals which brave the chill March winds to make an early return to their haunts in the north. Dr. Townsend informs me that he saw two birds at Ipswich, Massachusetts, in the Spring of 1921 as early as March 20;

Notes to "Geographical Range."

[3] Brooks, A., 1909, Auk, vol. 26, p. 60.
[4] Dionne, C. E., 1889, Catalogue of the Birds of Quebec.
[7] MacIlwraith, T., 1894, Birds of Ontario.
[13] Raine, W., 1892, Bird Nesting in Northwest Canada.
[13] Finley, W. L., 1906, Condor, vol. 8, pp. 35–40.
[14] Finley, W. L., 1912, Bird Lore, vol. 14, p. 415.
[15] Bowles, J. H., 1911, Auk, vol. 28, p. 170.
[16] Wintle, E. E., 1896, The Birds of Montreal.
[17] Grave, B. H. and Walker, E. P., 1913, The Birds of Wyoming, p. 31.
[18] Visher, S. S., 1913, Auk, vol. 30, p. 565.
[19] Seton, E. T., 1886, Auk, vol. 3, p. 150.
[20] Eifrig, G., 1909, Auk, vol. 26, p. 59.

Notes to "Migration."

[1] Baynard, O. E., 1913, Auk, vol. 30, p. 243.
[2] Stockard, O. R., 1905, Auk, vol. 22, p. 148.

the earliest previous record was March 27. The great mass of birds, however, do not reach the state until the middle of April, and in Maine it is the latter part of the month or the first week of May before we can reasonably expect to see them in large numbers at the rookeries. The average date of unpublished records made by Mr. A. H. Norton, of birds first seen at Portland, Maine, from 1885 to 1918 is April 17. The following records of arrivals at Philadelphia, Pennsylvania,[1] made by William Bartram about a hundred years ago are of interest:

1802	April 15	1805	April 23	1822	May 4
1803	April 7	1820	April 13		

In 1884 in collecting data for his book, 'Migration in the Mississippi Valley' Mr. W. W. Cooke[2] received his first record of the Black-crowned Night Heron from Rodney, Mississippi, on March 22 "where they were heard squaking at night as they flew over the city. On April 5 they appeared at Laporte City, Iowa, and two days later came to Heron Lake, Minnesota, which is the summer home of great numbers." This report probably typically represents the progress made by this bird up the Mississippi Valley during the Spring migration.

In Missouri,[3] the average date of arrival is April 10; at Philo, Illinois,[4] the Herons usually arrive April 20–25, and the average date of first arrivals during ten years of observations at Atwood, Illinois, is April 21. They arrive at the rookeries in Oregon about the middle of April, so the migration wave of the Herons is comparatively uniform across the entire continent.

The departure of these birds in the autumn seems to be less regular and more erratic than their coming in the Spring. In Maine most of the rookeries are often deserted by the first of October, but in the Fall of 1920 the birds did not leave the Whaleboat Island colony until November 12, and a pair of the birds remained until December 15, which is, as far as I know, the latest record of these birds in Maine. Mr. A. H. Norton's latest records of birds last seen at Portland, Maine, are as follows:

[1] Stone, W., 1913, Auk, vol. 30, pp. 325–358.
[2] Cooke, W. W., 1884, Bird Migration in the Mississippi Valley, p. 84.
[3] Widman, O., 1907, Preliminary Catalogue of Birds of Missouri, pp. 55–56.
[4] Hess, I. E., 1910, Auk, vol. 27, p. 21.

SANDY NECK, NEAR BARNSTABLE, MASS.

1. Night Heron rookery, from top of sand dunes, Cape Cod in the distance.
2. Dunes east of rookery, Heron tracks in sand where they gathered beach-grass roots for their nests.

October 7, 1885; October 10, 1898; October 18, 1916. In 1920 the bulk of the birds left the colony at Sandy Neck on November first, but several birds were seen at the rookery until December 15, the same date as that of the last ones reported at Whaleboat, Maine. This year, 1921, Mr. Shirley Lovell writes that birds were present in large numbers on September 12, but the place was entirely deserted on the following day, and none have been seen up to the time of writing October 1.

I know of no winter records of the Night Heron in Maine unless that of December 15, 1920, is considered as one. Winter records of these birds are not rare in Massachusetts, Connecticut and New York, and they regularly pass the winter in the States from Virginia southward.

Very interesting dispersals of the Herons from the rookeries at the close of the nesting season have been revealed by banding, a work which is yielding such profitable and important results with various species of birds. The dispersal of many of the Night Herons, especially the young, takes place in a northerly direction quite the opposite of what we had formerly supposed, and Dr. L. J. Cole[1] concludes, it is not to be inferred that because young birds appear in a certain locality in Autumn they have necessarily come from the north. A large number of our northern range records are of young birds, but as has already been stated, under geographical distribution, the nesting range does not necessarily coincide with the distribution of the young birds reported. The following are some of the banding returns of the Black-crowned Night Heron which have come to my attention.

Banded July 8, 1909, at Barstable, Massachusetts, shot at Goat Island, Cape Porpoise, York county, Maine, September 11, 1909, distance 120 miles north.

Banded July 8, 1909, at Barstable, Massachusetts, found on the marshes at Seabrook, New Hampshire, September 17, 1909, distance 90 miles northwest.

Other Herons banded at Barnstable between June 21 and July 8 were recovered at Wellfleet, East Orleans, Minot, Holliston and Berkley, Massachusetts, distances ranging from only 15 to 70

[1] Cole, L. J., 1910, Auk, vol. 27, pp. 153–168.

miles but all in a more or less northerly direction from the colony at Barnstable where they were banded.

The following returns were made of Herons banded June 17, 1922 at Barnstable, Massachusetts, (presumably the same colony noted above) by L. B. Fletcher and other members of the New England Bird Banding Association. The first return was of a Heron found dead on August 7 at Kennebunkport, Maine, 120 miles due north. A second Heron was taken August 20, 1922, at Fryeburg, Maine, 200 miles north and on September 4, another was picked up dead, at Beach Bluffs, between Swampscott and Marblehead, Massachusetts, about 60 miles to the northwest of the point where it was banded.

Mr. Paul Bartsch obtained similar results from the young Herons which he banded at a colony near Washington, D. C. A Heron banded in the summer of 1902, was shot September 24 of the same year at Abington, Maryland, 55 miles northeast from the colony. Three returns were made of birds banded in 1903. One was shot at Pennsville, New Jersey, July 18, 1903, one was captured July 19, in a street in Leesburg, Virginia, and the third was caught July 20 in a fish trap on the Potomac River.

Dr. John C. Phillips has kindly given me the following unpublished banding returns of Black-crowned Night Herons he banded at a colony at Wenham, Massachusetts.

A Heron banded June 13, 1915, was picked up in a dying condition at Masonville Station, Province of Quebec, November 8, 1915, and another banded June 3, 1915, at Wenham, Massachusetts, secured at Seabrook, New Hampshire, September 18, 1915.

The above striking examples taken from three places of dispersal and at widely separated times are I think conclusive evidence that there is a more or less regular movement of young birds to the northward at the close of the nesting season, and that many of the birds secured in the autumn along the northern limits of the summer range are birds which may have been reared in colonies located to the southward.

BREEDING PLACES.

The Black-crowned Night Heron is a gregarious and social bird breeding in colonies and but rarely building its nest in a situation

remote from those of its fellows. The size of the colony may vary from two or three pairs of birds to several hundred or even thousands of individuals. It is essentially a maritime bird in the states bordering the coast. There are in New England, especially in Maine, hundreds of inland lakes with a diversity of excellent nesting sites and feeding grounds, but as attractive as they seem to be they seldom lure the Night Heron away in great numbers from the roosts and rookeries near the clam flats and salt marshes.

In Maine, spruce-covered islands or dense groves of conifers on the mainland near the salt water are the places where one is most likely to meet with success in locating the largest breeding places and roosts. In this state there are at present thriving colonies at Barred Island and Allen's Island in the Penobscot Bay region; Whaleboat Island and Birch Island in Casco Bay and on the mainland at Scarboro Beach and at the head of Maquoit Bay near Brunswick, Maine. The colony at Falmouth about which so many reports have been made in the past is now deserted. Mr. A. H. Norton of the Portland Natural History Society visited Allen's Island in June 1921 and found there a rookery comprising about one hundred Great Blue Herons and nearly four hundred Black-crowned Night Herons. It is probable this colony has received contributions from various islands in the region, such as Metinicus, No Mans Land and others, which were formerly inhabited but recently deserted. The nests on Allen's Island were built at an average height of 25 feet in the low spruce trees which there do not exceed 30 to 40 feet in height. The majority of the nests were supported by the lower branches of the green conical tops so that they were in plain view to an observer standing on the forest floor. Several Ravens were seen at this colony and Mr. Norton thinks some of the dead half-eaten young that were lying on the ground represented the work of these black marauders. The colony at Whaleboat Island which contained only thirty pairs of Herons in 1915 has increased to a thriving community of more than two hundred fifty birds, not including about fifty Great Blue Herons which regularly nest there. The nests seen here were without exception built in the tall dead spruces, those of the Night Heron at an average height of 34 feet from the ground. None of them were lower than 10 feet and one was built near the top of a

tall spruce more than 60 feet in height. At this place there seemed to be a rough correlation between the height of the trees and the position of the nest. The majority of the nests were nearly the same distance from the top of the respective trees, a place where the densely branched limbs were best adapted for holding the nest. They were built near the trunk and were usually supported by the bases and smaller lateral branches of two or more horizontal limbs. With very few exceptions the spruce trees on Whaleboat Island are dead. The same has been the fate of other groves which have been occupied by the Herons during the breeding season. It has occurred so often in the case of both hard wood and coniferous trees and in so many localities that some observers are inclined to believe that the trees are at least retarded in growth if not killed by the limey deposits, which in some instances so completely cover the foliage and ground as to give the whole a whitewashed appearance. It is probable that the death of certain trees is hastened because of these excretions, but in the case of at least one colony, according to Mr. Norton, the emigration of the Herons was coincident with an attack on the trees by myriads of moths commonly known as the spruce bud Tortrix (*Tortrix fumiferana*). Here the Herons were innocently blamed for the damage primarily caused by an insect. I am inclined to believe the same may be true of the spruces on Whaleboat Island where all of the trees, some of which were probably never occupied by the Herons, are dead. Furthermore certain other plants growing underneath the trees of the colony seem to thrive best where the onslaught of lime is the greatest. For example, when I visited Whaleboat Island last August, the red raspberries directly under the Herons had the largest and finest fruit I have ever seen, not excepting the carefully cultivated ones in my garden. Certainly the relation of the excretions of the Herons to the death of the trees is open for further investigation.

Several large colonies have been reported from Massachusetts, but at the present time there are two that eclipse all others, at least from the standpoint of numbers. Dr. Chas. Wendell Townsend[1] has reported a colony which he found in a grove in the Ipswich

[1] Supplement to the Birds of Essex County, Aug., 1920.

dunes east of Wigwam Hill. This colony which contained only 25 nests in 1916, increased its numbers to 167 in 1917 and according to another careful census made in 1918 its numbers had reached 761 nests located in 492 trees. In a recent letter received from Dr. Townsend, he states he has made no census since 1918, but he thinks the numbers are still increasing. The other large colony in Massachusetts to which I have already referred is the one on Sandy Neck near Barnstable. My attention was first called to this colony by Mr. A. C. Bent who introduced it to me as a most admirable place for an intensive study of these birds. It has certainly proven to be this beyond my greatest expectations. About 90 per cent of the nests of this colony were built in low pitch pines, and the remainder were in scrub oaks, maples and a few in the bayberry and alder bushes which grew in the lower swampy portions of the grove. The height of the nests varied from one in a bayberry bush 2 feet above the water to one 42 feet high in one of the larger pines. The average height of 100 nests, which were carefully measured, was 22 feet, 4 inches. These nests unlike those in the spruce groves of Maine were generally located on the forked tips of the large branches and a considerable distance from the main trunk of the tree (Plate II, Fig. b). A detailed census was made of this rookery for purposes of comparison with other colonies of the country or with the same colony at some future date.

In making this census each tree was marked as soon as the nests were counted in order to reduce to a minimum, errors of omission or of duplication. The results of this census, made June 22–23, 1920, are shown in the following table:

TABLE I.

Number of nests in each tree	Number of trees containing respective number of nests	Total number of nests
1	282	282
2	179	358
3	118	354
4	80	320
5	86	430
6	43	258
7	35	245

TABLE I (*Continued*).

Number of nests in each tree	Number of trees containing respective number of nests	Totals number of nests
8	13	104
9	7	63
10	4	40
11	5	55
12	0	0
13	1	13
14	1	14
Total	854 trees	2536 nests

It was impracticable to examine the contents of all the 2536 nests, but those of 100 occupied trees, taken in groups of ten from as many representative portions of the colony were chosen to represent approximate conditions. In these 100 trees there were 292 nests, the contents of which were as follows:

57 nests contained 179 eggs
11 nests contained 18 eggs and 15 young
199 nests contained 547 living young
3 nests contained only dead young
22 nests were deserted.

The eggs of the 57 nests were distributed as follows:

Number of eggs per nest	1	2	3	4	5	Total
Number of nests containing respective number of eggs	2	11	23	19	2	57 nests
Total	2	22	69	76	10	179 eggs.

The young of the 199 nests were distributed as follows:

Number of young per nest	1	2	3	4	Total
Number of nests containing respective number of young	6	64	103	26	199 nests
Total	6	128	309	104	547 young

Including the nests in which there were both young and eggs, there were in the 292 nests of the one hundred trees, 197 eggs and 562 young. These trees and the number of nests they contained were fairly representative, hence it is conservative to estimate

that on June 22–23, 1920, there were in the 2536 nests of the colony, approximately 1700 eggs and 4800 young. There were at least 2300 occupied nests, which indicates that there were not less than 4600 adult nesting birds. As nearly as I could determine there were about 100 birds of the first and second summer plumages which were not nesting. If all the young and adult birds are included, the colony at this time contained at least 9500 indviiduals. Is it any great wonder that the noise of the rookery can be heard for a great distance when there are over nine thousand voices which may be joined in one grand pandemonium of calls and shrieks? An estimate of the relative number of eggs and young made a month later revealed that there were less than 400 eggs, while the young had passed the six thousand mark. Many of the young at this time were able to fly short distances and fully 70 per cent of them could leave the nests and perch upon the branches of the trees.

In 1904, Mr. S. W. Bailey[1] found a flourishing colony of 700 birds on Plum Island lying off the northeast coast of Massachusetts. The nests were placed six to thirty feet from the ground in trees of shad, poplar, maple and elm, with fewer numbers in oak and tupelo. According to Mr. Bailey, however, Plum Island was deserted in 1909; the birds for some reason having gone elsewhere to breed.

Dr. Frank M. Chapman describes a very interesting colony of 525 nests which he visited in 1899 at Roslyn, Long Island, within twenty miles of New York City.[2] The nests were placed in tall slender swamp maples, all within a limited radius of fifty yards. The lowest nests were thirty feet and the highest were at least eighty feet from the ground. According to Mr. Gilbert T. Pearson,[3] the numbers of this colony have steadily decreased to 250 in 1907, 200 in 1908 and in 1910 he found only 25 birds. Mr. Pearson also lists all the colonies of Black-crowned Night Herons known by him to be within two hundred miles of New York City. Mr. Chapman found two colonies of several hundred birds in

[1] Bailey, S. W., 1915, Auk, Vol. 32, pp. 424–441.
[2] Chapman, F. M., 1900, Bird Studies with a Camera, pp. 76–85.
[3] Pearson, T. G., 1912, Bird Lore, vol. 14, pp. 70–73.

swamp maples on Gardner's Island.[1,2] Paul Bartsch[6] gives a very complete account of three colonies in the District of Columbia. The nests of the birds in these colonies, according to Dr. Bartsch, were built in dense pine coppices. Mr. P. B. Philipp[7] reports a very unusual colony at Secessionville, South Carolina, which was located on an island about three acres in area. It was grown up with dense patches of bay and sparkleberry bushes and cabbage palms, interspersed with spaces of salt grass and prickly pear, the whole bordered with a strip of salt marsh. In this heterogeneous resort there were two hundred pairs of Green Herons, one hundred pairs of Little Blue Herons, three hundred pairs of Louisiana Herons and 25 pairs of Black-crowned Night Herons. All the nests were between 2 and 15 feet from the ground. In Florida[3, 4, 5] and the Gulf states[8] the Night Herons generally resort to the cypress swamps for their nesting sites.

I have visited seven colonies of the Night Herons in Illinois, the majority of which were located in hard wood trees of the floodal plains along the small tributary streams of the Wabash, Illinois and Mississippi Rivers. All these colonies were small, the largest not exceeding 40 nests. On a farm near Atwood, Illinois, the birds selected an old apple orchard for their nesting site. They came to this place year after year but in 10 years (1899–1909) that I observed them the number of nests built during any one season never exceeded a dozen. The small size of this colony was not due to any lack of protection on the part of the owner of the orchard for he as well as his neighbors did all they could to encourage these birds which they thought were destined to bring them good luck. Neither was its failure to grow in numbers to be attributed to an absence of nesting sites, for there were numerous groves and orchards seemingly as desirable as the place selected. It is not probable that the progeny of these birds went elsewhere, for there

---

[1] Chapman, F. M., 1908, Camps and Cruises of an Ornithologist, p. 45.
[2] Chapman, F. M., 1903, Bird Lore, vol. 5, p. 179.
[3] Kennard, F. H., 1915, Auk, vol. 32, pp. 3–4.
[4] Baynard, O. E., 1913, Auk, vol. 30, p. 243.
[5] Williams, R. W., 1904, Auk, vol. 21, p. 452.
[6] Bartsch, Paul, 1903, Smithsonian Miscl. Collections, pp. 104-110.
[7] Philipp, P. B., 1910, Auk, vol. 27, pp. 305, 306.
[8] Golsan, L. S. and Holt, E. G., 1914, Auk, vol. 31, p. 217.

SANDY NECK ROOKERY

1. Tops of pine trees occupied by the Herons.
2. Interior of rookery; nine occupied nests in one tree. June 23, 1920.

were no other colonies as far as I know within ten miles of Atwood. I think that the available food supply more than any other factor controlled the size of this colony. In hot dry seasons in central Illinois when all the ponds and small streams in the vicinity were dried up, these birds were often severely taxed to provide a living for themselves and young. In such colonies the yearly increase does not exceed but merely balances the death rate.

The nests of all the colonies so far noted have been in trees or shrubs, but in certain localities of America, especially in the west, the Night Heron does not limit itself to the woodlands for a place to build its nest. In these places it clings to what may be a more primitive habit of nesting in marshes on or near the ground. E. W. Nelson[1] found about 50 nests at Grass Lake, Lake County, Illinois, which were built in dense bunches of rice and placed upon the stiff stalks of rice and cane of the year before.

In Wisconsin[2] nests have been found among cane (*Phragmites*) and in Minnesota[3] among quill reeds and bullrushes. Mr. Frank Chapman reports finding them nesting in reed stalks 2 or 3 inches above water in a marsh near Shoal Lake, northwest of Winnipeg, Manitoba.[4] Robt. B. Rockwell[5] in his excellent paper on the Black-crowned Night Heron describes several interesting colonies from diverse localities. In 1916 he found a colony of 150 nests located in a cat-tail swamp near Barr 19 miles northeast of Denver, Colorado. The nests were large and clumsy yet well built structures of coarse sticks and weed stalks ranging in height from six inches to three feet above the ground. Again in 1917 he found a colony the nests of which were level with the surface of the water and were supported by masses of floating dead vegetation anchored in place by a few upright dead cat-tail stalks. These nests the author states were beautifully built affairs of slender twigs and weed stalks, very large, bulky, deeply cupped and quite symmetrical. Being far out from shore upon the open water they were conspicuous and easily discernible at a distance of a hundred yards.

---

[1] Nelson, E. W., 1876, Bull. Essex Inst., vol. 8, p. 131.
[2] Kumlien, and Hollister, Birds of Wisconsin, p. 36.
[3] Roberts, T. S., 1919, Bird Lore, vol. 21, p. 311.
[4] Chapman, F. M., 1908, Camps and Cruises of an Ornithologist, p. 334.
[5] Rockwell, R. B., 1910, Condor, vol. 12, pp. 113–121.

Dr. A. Wetmore[1] saw a number of Night Herons preparing to nest in the rushes at the upper end of Laguna de la Puerta at Lake Burford, New Mexico. In the extreme west along the Pacific coast these Herons build their nests in trees as do their relatives on the opposite side of the continent. Mr. W. L. Finley:[2, 3] reported finding a rookery of about 200 nests in a fir forest south of Portland, Oregon. Mr. Finley states that none of the nests were less than 130 feet up and some were 160 feet high in a colony which he found at the lower end of San Francisco Bay, California. In the summer of 1904 he noted 41 nests of the Great Blue Heron and 28 nests of the Black-crowned Night Heron in a single giant sycamore, 7 feet thick at the base, 120 feet high and with a spread equal to its height. In another tree there were 17 Great Blue and 28 Night Heron nests. In this large colony of 700 nests those of the Night Heron were placed at the very upturned tips of the sycamore limbs or else in the willows and alders at a relatively short distance from the ground. Mr. Finley counted 400 eggs from a single point in a giant sycamore tree which gives some idea of the density of the Heron homes at this unusual rookery. At Alameda, California,[4] according to Mr. O. A. Cohen, the Night Herons roosted and nested in the limits of the town. There the nests were placed in tall cypress trees at an average height of 60 feet from the ground.

From the foregoing account it is apparent that the Black-crowned Night Heron is very adaptable to varying conditions as far as the choice of the nesting site is concerned. Few birds can claim such a diversity of nesting places representing all the conditions from a nest on the ground, or among the reeds a few inches above water, to those in shrubbery or relatively low coniferous and hardwood trees or in the very topmost branches of the giant sycamores and firs of the Pacific coast.

FOOD AND FEEDING HABITS.

The available food supply more than any other natural factor determines the existence and continued prosperity of a colony of

[1] Wetmore, A., 1920, Auk, vol. 37, p. 391.
[2] Finley, W. L., 1906, Condor, vol. 8, pp. 35–40.
[3] Finley, W. L., 1907, American Birds, pp. 221–231.
[4] Cohen, O. A., 1900, Condor, vol. 2, pp. 10–12.

Herons such as the one of nine thousand birds at Sandy Neck, Mass. The local distribution of a bird whose food consists almost entirely of animals derived from the water, is destined to be restricted to those localities in which this kind of food exists in abundance. Most of the colonies of Black-crowned Night Herons, which it has been my privilege to visit in the middle west States have been near fresh water ponds, lakes, sluggish streams or swamps—places where frogs, fish or salamanders could be easily secured. The larger colonies I have studied in New England have been near or directly on the sea coast where the birds have access to acres of salt water marshes and miles of mud flats, an environment which provides an abundance of littoral life as well as suitable places from which the fishing operations of the Herons can be carried on. The data upon which this account concerning the food and feeding habits of the Night Herons is based were secured by field observations and from the examinations of regurgitations of the birds at Sandy Neck. Because of this queer habit of throwing up the contents of their stomach on the least provocation, it was possible to make extensive studies of the food without killing or doing the birds the least bit of injury.

From the tabulations of about one hundred regurgitations it was determined that 80 per cent of the food consisted of fish. Most of the fish which were in a condition to permit identification, were whiting (*Merluccius bilinearis*) herring (*Clupea harengus*) and cunners (*Tautogolabrus adspersus*), common species, and perhaps the easiest for the Herons to obtain in the waters adjacent to the colony. Some of the whiting secured by the birds were comparatively large, weighing 300 to 800 grams, more than half the weight of the birds. In a few cases the fish were so long that after being swallowed the caudal fin projected from the beak. Most of the large whiting were picked up by the birds in a dead or dying condition. On several occasions I saw the beach along the north shore of the Cape literally covered with the dead bodies of fish, chiefly the whiting. At such times there were hundreds if not thousands, of Gulls present but the Herons also received their share of the loot. A few small flounders, an occasional mackerel and even such seemingly unedible creatures as the sculpin, puffers and sea-robins were taken by the birds when they were probably

hard pressed for food. Some of the latter fish as evidenced by field observations, are secured at the weirs along the Cape.

The remaining twenty per cent of the food was made up of miscellaneous animals; no vegetable material was found in the regurgitations and stomach contents of the birds examined at Sandy Neck. The remains of animals in the food which could be identified comprised marine annelids, chiefly *Nereis virens*, crustaceans represented by numerous shrimp, sand-hoppers and a few small crabs; insects, chiefly beetles, flies and dragon-fly nymphs, all present in negligible quantities. Of the mollusca, only the squids were present in appreciable numbers and these were probably dead and floating on the water when picked up by the Herons. In Maine numerous shells of clams and other bivalve mollusks were found on the ground beneath the nests of the rookeries, but this may have been the work of Crows, and as yet I have no direct evidence of these birds feeding upon shell covered mollusks in nature. Apparently the Herons have not learned the trick of the Gulls that mount high in the air to let a clam fall on the rocks to be crushed in order to secure the prized contents. The only fresh water animals found in the food of the Herons at Sandy Neck were the tadpoles and adults of Fowler's toad which were abundant in the numerous pools in and around the heronry. Frogs and salamanders constituted the chief article of food of the Herons at a rookery near Atwood, Illinois. Dr. Alexander Wetmore,[1] states that waterdogs (*Ambystoma*) and frogs were the only food of birds breeding at Lake Burford, New Mexico. The birds acted as scavengers in that they ate the dead Axolotls (sexually mature larvae of *Ambystoma*) which were found floating on the water.

Dr. Frank M. Chapman[2] saw eels in various stages of digestion and decay in regurgitated masses which he found on the ground in a rookery near New York City. Dr. Paul Bartsch[3] states that the yellow perch comprises the largest part of the Heron's food in the colonies he has studied in the District of Columbia. He also noted eels, a garter snake, and frogs, but found no crayfish in the

[1] Wetmore, A., 1920, Auk, vol. 37, p. 394.
[2] Chapman, F. M., 1900, Bird Studies with a Camera, p. 80.
[3] Bartsch, P., 1903, Smithsonian Miscl. Coll., vol. 45, p. 107.

regurgitations. Mr. T. Jasper[1] states that the Night Herons eat fish, shrimp, tadpoles, frogs and leaches and Mr. Giraud also found mice and lizards in the food of the birds he studied on Long Island. Mr. O. E. Baynard,[2] who made a study of the food eaten by fifty young Black-crowned Night Herons in a Florida rookery, found the following: 60 crayfish, 610 small catfish, 31 small pickerel, and 79 dragonflies. Mr. Baynard emphasizes the importance of the crayfish eaten, as the latter destroy thousands of spawn of fish. He states that although many fish are eaten by the Herons, the fish are more abundant because of the protection afforded to their spawn by the destruction of crayfish. The fish are valuable to man not only as an article of food, but they serve as a material check on the mosquito population in that region of Florida. Reports from Jamaica show that the food of the Herons there is chiefly crabs and other crustacea. Mr. S. F. Denton[3] reports a very interesting and unusual experience in which a partly fledged young swallowed a downy nestling which had been placed in the same cage. He also writes that good sized snakes were swallowed repeatedly until the snakes were overcome and killed in the process. At another time, an attacking rooster's head was seized by the Heron in a desperate but futile attempt to secure food. As the bird grew older the animals were regularly killed before any attempt was made to swallow them. Mr. James DeKay[4] includes among other things in his list of articles of food eaten by this Heron an alga, sea lettuce (*Ulva latissma*). Vegetable food is seldom eaten, but Mr. Roy Latham[5] found that the young in a colony at Orient, Long Island, were fed upon an alga (*Agardhiella gracilaria*) and similar forms which abound in the water near Orient. Though the Black-crowned Night Heron may sometimes feed upon plants as cited above, it is pre-eminently carnivorous, depending primarily on aquatic animals of various kinds as a source for its food.

---

[1] Jasper, T., 1878, Birds of North America.
[2] Baynard, O. E., 1912, Wilson Bulletin, vol. 24, p. 169.
[3] Denton, S. F., 1885, Random Notes on Natural Hist., vol. 2, pp. 9–10.
[4] Dekay, J., 1844, Zoology of New York.
[5] Latham, R., 1914, Bird Lore, vol. 16, p. 112.

FOOD OF THE YOUNG.

The first food received by the downy young consists of juices of predigested material. In the examinations made at Sandy Neck, this food was so completely liquified that it was practically impossible to determine the kind of animals composing it. In delivering food to the downy young the adult seemed to insert the tip of her beak into the wide open mouth and the transference of the juices was made with comparatively little effort. The parent bird usually delivers small amounts at rather short intervals and I have frequently seen, from my blind, the downy heads of day old birds appear between the feathers of the parent to receive their ration of fish extract. By the third day, more substantial food, such as semi-digested fish and shrimp, were given to the young. Among 20 regurgitations of nestlings 3 to 10 days old, 16 were made up entirely or largely of shrimps present in pieces ranging from a few millimeters to one and in some instances three centimeters in length. These crustaceans are very abundant in the marshes of Barnstable Bay where the Herons may be seen fishing for them at all times of the day. Since a large percentage of shrimp was found in many regurgitations of the young until they were at least three weeks old, it is apparent that they constitute a very important element of the food at least of the younger birds at Sandy Neck. When the young became more than three weeks old the food was made up chiefly of fish, which were often delivered without any pre-digestion. In addition to the food brought by the adults, the young birds, when hungry, frequently sampled miscellaneous materials about the nest as shown in the following determination of a regurgitation from a bird 25 days old. Fish comprised 90 per cent, fragments of bark 3 per cent, pine needles and buds 4 per cent, grass from the nest 1 per cent, flies and beetles 0.5 per cent and miscellaneous unidentified material 1.5 per cent. From my blind I saw this bird greatly annoyed by a large blowfly which had been attracted by the odors of the nest. The bird's eye followed the circles and evolutions of the buzzing insect and made at least a dozen futile attempts before he succeeded in hitting his mark. Needless to say such practice develops skill which will be of use on future fishing expeditions.

The slightest disturbance to the young birds and often the mere presence of a human being in the vicinity of the nest was enough to cause them to vomit the contents of their stomachs, a habit extremely useful when one desires to make food determinations. This reaction of the young is apparently a reflex initiated by the stimulus of fear. Birds which I visited, handled and measured daily exhibited no fear and in such a physiological state, never regurgitated. Preceding the act of vomiting the abdominal muscles underwent rapid and violent contractions. It does not seem to be a defensive action on the part of the bird though in some instances it may prove such. Certainly it is an offensive act to any one who is unfortunate enough to be the target. At one nest a young disgorged an enormous meal on the sticks at the edge of the nest; immediately a fellow nestling who evidently was not so well favored at the last visit of the parent, proceeded to eat up the unsightly mess with an apparent relish.

The method of feeding the young is described in my notes of July 4, 1920, as follows: "An adult bird has appeared at nest number 138 which contains four young four weeks old, the nestlings have suddenly arisen from their dozing posture to tease and coax for the dinner which is long overdue. All are uttering calls resembling "Yak!, Yak!, Yak!" One youngster has leaped up to secure a hold of the beak of the mother bird, the others have now joined him apparently aware that it is the doorway to a well filled cupboard. After thus testing the patience of her young for 3 or 4 minutes the mother finally raises her crown feathers, goes through a contortion of her neck and suddenly thrusts her beak toward one of the young. The mother is now going through a wriggling, writhing motion, swaying the head of the youngster back and forth as she proceeds to deliver a large fish. Two minutes later: The caudal fin of the fish is still protruding from the mouth of the favored bird who rests on the edge of the nest, content to wait until its stomach can make room for the entire fish. The parent bird is now perched on a branch some distance from the nest and gives no heed to the pleading and clamoring calls of her ever hungry offspring. Both adult birds have been away fishing for the other parent has just alighted at the nest with a small herring in its beak. One of the audacious young has snatched the

herring without waiting for any preliminary ceremony and has swallowed it in an instant. Two minutes later: The second parent to appear has regurgitated five medium sized fish on the nest beside the young which are scrambling after them but the one with the large fish in his stomach is not so enthusiastic. Three minutes later: The fish are gone and the young are calling for more. Five minutes later: The parents have left the rookery for the fishing grounds and the youngsters have settled down to doze until the next meal." I saw several broods of the older young fed in the manner last described but in the case of the younger nestlings the food was usually delivered directly from parent to offspring by the process of regurgitation.

In order to study the development and growth of the young after they were able to leave the nest, eight birds of various ages were kept in poultry coops at my camp where I could observe them conveniently. This method also provided an opportunity to learn something of their preferences for food. The young birds are easily adapted to cage conditions, and after one or two days, ate readily the food provided for them. Fish of various kinds were secured in abundance from Mr. Lovell's weir which stood less than a stone's throw from my camp. The confined birds ate freely of bread soaked in water or milk, but preferred fish when both were placed before them. Herring seemed to be preferred to whiting, but the latter were taken before sculpins, puffers, sea robins or flounders. All the latter were eaten when no other kinds were available. Living fish were much preferred to dead ones. Fish were more readily eaten than beef or pork, but all the birds selected shocked clams instead of fish when both were placed before them. The birds were also fond of snails but as I have previously stated, I have no conclusive evidence that shell mollusca are eaten by the Herons in nature. The birds I had in captivity ate from half a pound to a pound and a half of food daily, and I believe, those existing under natural conditions, where they would be more active, may often demand much more for their daily ration.

It is apparent that the colony of nine to ten thousand birds must exact an enormous toll on the fish of Cape Cod Bay. Since fish, according to my data, constitute 80 per cent of the food of the Herons it is conservative to estimate that 3 to 4 tons of fish

are eaten daily during the nesting season at Sandy Neck. To be sure some of the fish destroyed are worthless as food to man, but others like the herring, whiting and mackerel are of great value. Furthermore, it must not be overlooked that fish and other animals useless to man serve as food for fish of commercial importance. The fishermen of the Cape are well aware that the Herons exert an appreciable effect on the fish supply, but not in a single instance did I find any sentiment unfavorable to the Heron. When seals appear in large numbers in the harbor, it is a signal for violent denunciation on the part of the fishermen. Every effort is made to exterminate the furry intruders, but the Herons receive the protection of all, and not a word of protest is voiced against the avian poachers. The natives think of these birds as essential to their environment, beautiful creatures well worth the price of the fish eaten. If the agriculturists would follow the example of these fishermen of the Cape, they would not complain when the Robins eat a few of their strawberries and cherries.

CALLS AND NOTES.

One of the familiar and characteristic calls of the Black-crowned Night Heron is a sharply accented "Quawk," a note, which I have already stated, has given origin to one of its many common local names. At Sandy Neck, as I listened to the numerous Herons which passed over my camp during the night and to others perched on the fishing weir, I noted variations which may be crudely represented by 'Qua,' 'Quak,' 'Quark,' or 'Squawk.' It would be interesting to know whether these modifications signify different meanings to the fellow Herons or are merely individual variations of little or no linguistic consequence. Though the sharply accented calls described above are the usual ones heard, the repertoire of the Heron is by no means limited to these simple notes. The medley of voices heard when one is in the midst of a large colony of birds baffles the listener in his attempts to record and interpret the infinite number of sounds. Indeed, the complicated social community made up of hundreds and often thousands of birds, seems to demand a kind of language to serve as a means of intercommunication.

When one approaches the colony he invariably disturbs first

the outpost sentinels who seem ever ready to give a warning note which sounds like, 'Woc, woc, wock!-ä-woc, woc, woc.' This call usually results in a number of Herons rising from the neighboring tree tops, who take up the call and repeat it until a virtual cloud of birds is flying about in great confusion. After you have entered the rookery, the notes of the adults are drowned out by the incessant clatter of the young birds which during July and August are represented by birds of all ages. The call of the downy young resembles a faint 'Tet! tet! tet!' or 'Yip! yip! yip!' the half grown nestlings utter a sound more like 'Yak! yak! yak!' and the older young utter a harsher, coarser sound resembling roughly the words 'Chuck, chuck-a-chuck, chuck, chuck.' These various calls of the young all mingled together sound like the deafening clatter and hum of an infinite number of machines in a great factory and indeed it is a Heron factory. During the course of the day the intensity of the calls of the young varies directly as the keeness of their appetites. These calls could be heard at all hours of the day or night but just before the bulk of the adult birds came in from the feeding grounds, a time which varied with the tide, the number of young calling and the volume of sound was at a maximum. At such times the rookery resounded with a deafening monotonous clatter. When the young were hungry, they were also irritable, and the least disturbance by a neighbor would cause them to render a defensive thrust accompanied by a ghastly, sharply accented 'Sque-e-e-e-e-e-ak.' In uttering this squeal the beak is thrown wide open, during the 'Sque-e-e-e-e-e' and then suddenly snapped together at the termination of the much accented 'ak.' Doubtless it is these wierd sounds which have led some observers to compare the noises of a colony of Night Herons to the war whoops of a band of Indians. A similar note is uttered by the adults when they are defending their nests against intruders.

When the parent bird arrives with food she often utters a series of low guttural tones, some of which resemble very much the sounds made by an old hen when she is brooding her chicks. At other times, she would give a series of loud calls resembling 'Oc-oc-goc! -goc! -goc! -oc, -oc, oc! oc!' or 'Woc-a-woc, woc, woc, Wock-a-woc, woc,' which judging from the actions of the young, conveyed a definite unmistakable meaning.

GENERAL ACTIVITIES OF THE HERONRY AT SANDY NECK.

There is more or less activity on the part of the birds at all hours of the day or night during the nesting season but the hours following dawn before it became hot and in the evening immediately preceding and following sunset were as far as could be determined, the times when the birds were most busily engaged in feeding their young. An observer standing on the summit of the high sand dune west of the rookery commanded a view that enabled him to see readily every bird which came to or went from the colony. Since these numbers give an index to the relative activity of the birds the following counts made July 10, are of considerable interest.

Time	Number of birds returning to the rookery	Number of birds leaving the rookery
3:45 A.M.–4:00 A.M.	3	0
4:00 A.M.–4:15 A.M.	18	20
4:45 A.M.–5:00 A.M.	30	174
6:30 A.M.–6:45 A.M.	170	135
7:00 A.M.–7:15 A.M.	40	30
2:30 P.M.–2:45 P.M.	6	8
3:00 P.M.–3:15 P.M.	2	115
6:30 P.M.–6:45 P.M.	185	43
7:00 P.M.–7:15 P.M.	180	21
7:30 P.M.–7:45 P.M.	62	40

The above counts are fairly typical but the state of the tides influenced to some extent the movements to and from the rookery. It was impossible to make accurate counts at night but though the task of feeding went on uninterrupted by darkness the activities were never as pronounced as at dawn and sunset. It is generally believed that the Night Heron as the name implies feeds chiefly at night. This conception has doubtless been formed in part from seeing the birds, as in my own experience, venture near the habitation of man only at night. A fish weir which stood less than 100 yards from my camp was seldom visited by a Heron in day time yet at every low tide during the night one could expect to see a dozen or more Herons standing on the poles and as many others clinging to the net near the water engaged in capturing fish entangled in the meshes. I have also heard, even on the darkest nights, the calls of these birds as they flew overhead, but certainly

the Black-crowned Night Heron is not to be classed with such birds as the Owl which have exclusive nocturnal habits.

The following notes taken from my field book for June 27 will give the reader an idea of the general activity of the colony at night.

"6:00 P.M. I have concealed myself on the side of one of the dunes west of the rookery, a place where I have a chance to observe the birds in the ever changing light of the sunset.

"6:15 P.M. As the heat of the sun becomes less intense the older of the young birds which have been under cover of the pine boughs are coming up into plain view. I can see hundreds of young as I survey the tops of the trees with my binoculars.

"6:30 P.M. A parent bird has just arrived to feed four young which are in a tree about 20 yards from me. The food is not delivered immediately so the impatient young are making known their feelings about the delay by thrusting their beaks towards the parent and uttering the characteristic calls.

"6:38 P.M. A fish having the appearance of a herring and weighing about three fourths of a pound was regurgitated by the adult before she thrust her beak in the usual way toward one of the young. Two of the fledgelings seized the fish at the same time and a royal tussle is on in the tree tops. Neither is willing to compromise and the fish fails to part.

"6:42 P.M. One of the birds has lost his balance and in order to secure himself has released his claim on the herring to grasp a limb with his beak. The successful bird is swallowing the fish with a gleam of triumph in his eye, while the old one is viewing the scene with apparent approval. There are many birds coming to and leaving the rookery and it seems to be the most active period of the day. The sight of these beautiful Herons illuminated by the mellow glow and brilliant hues of a most gorgeous sunset is one to be long remembered. The birds are in every conceivable attitude—some are proudly displaying their plumes or preening their feathers, some are perched in motionless attitudes appearing like mounted specimens and others are brooding eggs or young. The most interesting of all however are the antics and activities of the hundreds of families of older young.

"7:15 P.M. As the sun lowers and the heat is becoming less intense practically all of the young which are able are leaving the

nests to climb to the branches above and those which have been out climb still higher until they reach the topmost twigs. Often there is a dispute for the summit of the tree but the oldest and strongest usually win and hold the coveted places. On the tops of the cedars, forming a dense grove, near the rookery are hundreds of Herons which have been congregating during the past half hour. Many of these birds are in the streaked or second year plumage, a type which does not seem to be present at the rookery in large numbers during the day time.

"7:30 P.M. The sun has sunk down behind the sand dunes, the interior of the rookery is becoming dark and objects there can no longer be easily distinguished but the tops of the trees are still illuminated by a dim roseate glow of the sunset.

"7:40 P.M No sooner has the twilight faded when a glorious moon throws a soft mellow light over the whole scene. which enables me to see clearly the birds on the tree tops especially the light colored adults.

"8:00 P.M. The young are leaving their perches on the limbs to huddle together in the nests as the temperature of the night air suddenly drops. Some of the more hesitating youngsters are receiving vigorous scoldings from their parents because of their unwillingness to go below. The older young which have a substantial covering of feathers seem to be given greater indulgence, and are allowed to remain.

"8:30 P.M. Silence and night are not to be associated at a Night Heron colony. The screams and calls seemed to be increased in volume when contrasted with the quietness of the surroundings.

"9:00 P.M. I left the blind on the sand dune to explore the interior of the rookery It was indeed a weird experience to be in the woods alone where every form is made grotesque by the uncertain light, and every sound of that multitude of birds, seems to be magnified ten-fold I could scarcely see my way in certain sections of the denser portions of the pines, yet the birds, judging from their movements, evidently distinguished me as easily as they do in the bright light of day.

"10:10 P.M. I was seated on a fallen tree trunk, listening to the deafening calls and shrieks of the night when a four-footed animal

appeared in a spot of moonlight not more than thirty feet from me. I called to him thinking it was a dog which had lost its way. As soon as he heard my voice he directed his ears toward me, gazed for a moment and then wheeled around and leaped into the underbrush. The general behavior of the animal and the large bushy tail lead me to believe it was a fox on one of his nightly patrols in search of food." (I was told subsequently that foxes are common among the dunes of Sandy Neck and no doubt a large part of the living of these beasts during the summer months, consists of unfortunate young herons which frequently fall from the crudely built nests).

"11:00 P.M. I am leaving the rookery to return to my camp. I can hear the calls of the adult birds flying back and forth above me from their fishing grounds to the rookery. When I reached the brink of the sea wall, I crouched in the tall sea grass to watch about twenty Herons which were fishing along the edge of the water. The Herons, while thus stalking their prey appeared like stone images of the birds, but at irregular intervals, a splash, a gulp, or a squawk revealed that these fishers were alert and far from 'asleep on the job.'"

(*To be concluded.*)

Searles Biological Laboratory,
Bowdoin College, Brunswick, Me.

NOTES ON THE SHORT-EARED OWL.

BY CHAS. A. URNER.

ON or about May 22, 1922, the nest of a Short-eared Owl (*Asio flammeus*) containing six eggs was found by a farmer's boy on a stretch of open salt hay marsh near Elizabeth, N. J. So closely did the bird sit that it was accidently struck by the scythe and its legs injured. One egg, nearly ready to hatch, was broken. The remaining eggs were left undisturbed but they had disappeared the next morning, though the two adults were frequently seen in the vicinity.

Two adult birds, probably the same pair, I saw flying about not

far from this nesting site on May 30, when I visited the locality. One was calling.

On June 24, my second visit, one bird met me, evidencing alarm by its calls and actions. After careful search in the thick salt hay I started the mate—apparently the same bird that had been injured, since it had difficulty in alighting, and when hunting, as I observed later, used its bill exclusively in attacking its prey, diving to the ground headlong and sometimes repeatedly as it flew low over the marsh. The locality from which the injured bird arose—thick salt hay and higher rank growths—contained many small nested spots, much down and a number of small pellets, all, on a merely superficial examination, containing the remains of mice. I was unable to locate the young though the constant anxiety of the adult made me certain of their presence.

On July 1, my next visit, the adult met me as before and I finally located three young. Two were well feathered and able to fly. The third was only able weakly to clear the grass, flying barely fifty yards at a time. There may have been more young birds since the parent continued to manifest concern after the three had left. The wounded adult I did not find though a bird that might have been it appeared later and settled in the grass where the young had disappeared. The pellets about the spot from which the young were flushed all contained the remains of mice though they were not carefully examined for evidences of bird remains.

The possibility occurred to me that the uninjured adult had moved the five remaining eggs when the nest was disturbed on May 22 and that the hatching had been completed near the spot from which I flushed the young—about 150 to 200 yards from the old nest. The association of the wounded adult with the young birds gives some color to this theory, though there is of course chance that the young were from another brood and that the association was accidental. A second pair of adults I had frequently observed about a mile from this locality, but never nearer.

The nest found by the boy, which I collected, was composed almost entirely of salt hay, and was about nine inches in diameter and an inch and a half to two inches thick. The broken ends of the upper layers of hay in the nest showed relatively fresh fractures.

The ground, immediately about the nest for a distance of four inches had apparently been almost cleared to furnish material and on one side the thick stubble still stood as if the matted dried grass had been broken off by the bird's bill. The presence of feathers (apparently owl's feathers) throughout the mass of the nest furnished additional evidence that this species of owl actually constructs its own nest.

On July 4, 1922, while crossing still another section of the marsh —a well-drained piece a considerable distance from the previously mentioned localities—I came upon a Short-eared Owl which by its actions indicated the presence of a nest or young. Careful hunting finally brought its reward. The mate rose, almost from under my feet, from a clump of goldenrod, a thick growth about two to two and a half feet high. In the shaded center of this clump was the nest, containing one egg and two young which I estimated to be somewhere between 9 and 13 days old, my estimates being based on observations of another brood the previous year. The young were still downy, wing quills half an inch long in one and better developed (an inch or more) in the other. They measured five and five and a half inches long as they squatted in the nest. Both parents appeared about normal and were uninjured.

The nest, almost two inches thick, was composed of salt hay with a little coarser material—dry weed stalks. It was about ten inches in diameter and literally carpeted with the feathers of small birds. At its edge was a freshly-killed Sharp-tailed Sparrow (*Passerherbulus caudacutus*). I found no remains of mice and only one small pellet composed apparently of feathers.

On July 23, my next visit, I found one adult hunting nearby, an unhatched egg in the nest, and one young bird about seventy-five feet from the nest. The other I could not find in the thick cover. The deserted nest contained some feathers of small birds but not nearly as many as on July 4. These feathers could hardly have blown away from the well-protected retreat in which the nest was placed, and evidently most of them had either been consumed or carried off.

The young bird was well-feathered and nearly full sized. It was unable to fly though it flapped its wings and could just raise itself from the ground. When approached closely it snapped its bill

and turning on its back, fought with its feet as is the habit of young Harriers. Fresh pellets in the vicinity showed on casual examination the remains of mice. These were collected and sent to Mr. W. DeW. Miller of the American Museum of Natural History for thorough examination.

On August 2, I flushed one young bird from the ground not far from the old nest after both parents had appeared and hovered near, one calling nervously. Evidently the young bird was still being fed since I presume that evidences of parental concern in birds continue only as long as the young are dependent upon the adults for food. In this instance it would appear that the young owl remained in the vicinity of the nest about six weeks from the date of hatching and had not yet acquired complete independence on August 2.

The time from hatching to flight, while not exactly determinable from my incomplete observations, I would estimate as a month or perhaps a few days over—in this case somewhere between 31 and 36 days. This would tend to support the theory that the eggs were moved by the owls in the first-mentioned case, since the period from May 22, when the eggs, about ready to hatch, disappeared, to July 1 when the young birds in that vicinity were found full grown and able to fly, was 39 days.

An additional fact which tends to support this theory that Short-Eared Owls sometimes move their eggs or helpless young lies in a comparison of the two nests found this year with that containing the brood of eight downy young found in the same general vicinity, May 14, 1921, and described by the writer in 'The Auk', Vol. XXXVIII, No. 4, p. 602. Both the nests found in 1922 were fairly thick masses of hay, etc. That of 1921 "but a handful or two of matted hay . . . little more than was to be found covering all the ground thereabouts." As was then stated an unusually high tide inundated almost all the marsh on May 4–5, 1921. The spot where the young were found ten days after this inundation was not flooded, and the absence of a typical nest under the birds may thus be considered significant.

The inference also seems fair, in connection with this and the previous year's observations, that during the early stages of their development young Short-eared Owls in this locality are fed

chiefly on small birds; small mammals later on making up a more prominent part of their diet.

After collecting the second nest (that found July 4) I discovered under it, as a foundation, a well decayed mouse nest made of fine grasses, and of some bulk. Removing the mouse nest I made a further interesting discovery. Directly beneath it was a more or less discolored white egg, one side slightly cracked as if from freezing, the dimensions corresponding to the egg of the Short-eared Owl. It was elliptical in shape while the unhatched egg found in the 1922 nest on the same spot was more pointed. Under the cracked egg could still be seen the outline of a well-rotted nest, presumably from the 1921 season. This is quite convincing evidence that the Short-eared Owl may occasionally return to an old nesting site, though I am uncertain how to explain the lateness of the 1922 nesting at a spot used the previous year.

In connection with the above notes a description of the calls of the Short-eared Owl may be of interest. I have heard at least five distinct calls, but since in none does a definite consonant sound occur their exact description by syllables is impossible.

The call I have heard most frequently uttered when the nesting site is closely approached, but which I have also heard during fall and winter, is a short, accentuated, rather high-pitched and rasping note, resembling the barking of a small animal. Its quality, loudness and pitch differ somewhat between different birds, possibly between the sexes. (Such a difference in pitch is noted between the rolling calls of the male and female Harrier.) This note of the Short-eared Owl is short, occupying from a fifth to half a second. It is usually uttered in doublets or triplets, and might, in the latter case, be written "*wak, wak, wak*" or "*yak, yak, yak.*" At times however individuals are found which string out the series to seven or eight and on rare occasions I have heard as many as sixteen in a row. When more than three "*waks*" are uttered the rate is usually quite rapid—four or five to the second.

The second call, uttered singly or with an appreciable pause between, is of much the same quality as the first but of longer duration (one half to one second), and not so loud or sharply accentuated. It may be written "*w-a-a-a-k.*"

The third call is also rather high-pitched, longer than the first,

but of varying length. It is a little less harsh but of rather unpleasant quality. It may roughly be described by the syllables "*wā' u*," the "*wā'*" more or less prolonged and the "*u*" short. At its longest however it is rarely over a second's duration, and sometimes it is contracted to one syllable, as "*wow.*" I have heard this call only when the nest is first approached. It, and the second call, apparently denote less intense excitement than the first.

The fourth call is a rather long drawn, rasping note of one or two seconds' duration, without noticeable accent and of a quality suggesting sawing or filing. This call is heard as the bird comes to the ground to attract the attention of the invader when the nest is approached. It is uttered in series, the quality often gradually changing into the fifth call—a clear whistle-like squeal, sometimes short and sometimes long-drawn. No doubt there are still other calls I have not been fortunate enough to hear.

There is also a sharp snap of the bill heard both from adults and young.

The intensity of the tumbling demonstrations of the parents and the frequency of the cries when one draws near the nest vary considerably between different individuals, and also apparently in the same individual at different times. Some drop fluttering to the ground as if wounded and in dire distress; others merely sail down. Some call almost incessantly; others rarely. Some stay close to the intruder; others fly off. The male I believe, as with the Harrier, is usually the more aggressive. As a rule the bird comes closer to the intruder the nearer he draws to the nest and this trait can be made use of in locating nests and young. The usual position of the adult, when one approaches the nest, is overhead.

An interesting performance occasionally seen when the nest is visited is a steep dive toward the ground by the adult, the outstretched wings being brought together under the body as the bird descends, the ends being clapped together rapidly, the sound being distinctly audible when the bird is within one hundred feet.

Eaton, in his 'Birds of New York,' 1914, Vol. 2, p. 114, says, in referring to the Short-eared Owl: "This is the most silent of our Owls, and even when defending itself or its nest makes only a

sharp snapping sound with its beak." It would be interesting to know the basis of this statement. Certainly the latter part does not hold true of the birds of this species nesting on the Elizabeth marshes.

When hunting afield, either in broad day or in semi-darkness the local Short-eared Owls either sit motionless upon a post or the ground, or range about. flying relatively low over the marsh, as does the Harrier. One local bird however (and one only) I have frequently observed following the tactics of the Sparrow Hawk, flying at a somewhat greater height than the Harrier, and, when attracted by some movement below, "standing still" in the air with tail down and wings beating, in characteristic Sparrow Hawk poise. The identity of this bird I was able to establish on different occasions since it was one of the parents of the young birds found July 1.

In conclusion I will relate an incident that may throw some light on the menu of the Short-eared Owl and the relative uses of its senses of sight and hearing when hunting in the dusk. As I crossed the marsh well after sunset on the evening of August 9 I heard in the distance the call of Yellow-legs feeding. I answered. Suddenly a Short-eared Owl came out of the growing darkness and dove at my straw hat. He missed it by inches. I whistled the Yellow-legs call again. He turned and dove at me the second time with no end of determination in his manner. Six times I whistled and six times he turned and swooped at me, finally alighting on a mud pile nearby to look the situation over more carefully. I stood in the open marsh with no protection. Had I whistled in the daylight he would have shown no interest. Apparently he did not recognize me as a human in the dusk. He struck on the impulse of his ears—not his eyes. And apparently he knew the taste of Yellow-legs.

614 Cleveland Ave., Elizabeth, N. J.

A STUDY OF THE NESTING OF MOURNING DOVES.

BY MARGARET MORSE NICE.*

4. THE PARENTS.

THE routine of nest life may be summed up as follows; the male gathers the materials for the female who fashions the nest; the male incubates and broods during the day while the female does the same during the night, early morning and late afternoon; and both parents regurgitate "pigeon-milk" for the young. Two striking differences between the nest behavior of Mourning Doves and most passerine birds is the almost constant brooding of the young till near the end of the nest life and the lack of any sanitary care of the nest.

Mourning Doves are very shy about going to their nests when they are watched; I have never seen them do this unless I was out of sight in a building or so far away as not to disturb them.

Yet they will apparently endure much visiting of their nest without deserting. In 1921 about half the 76 Doves that we frightened from their nests remained at their posts until some one started to climb the tree; about a third were sufficiently timid to fly off when we merely walked under the tree; while a sixth were so bold that they staid on their nest until nearly or quite touched by the investigator.

The "broken wing" ruse. Sometimes Mourning Doves exhibit the "broken wing ruse" when frightened from their nests. If much distressed they throw themselves on the ground near the intruder and flutter about as if seriously injured. More often this instinct shows itself as follows: the bird flies some distance, perhaps 10 to 30 yards, flutters a little on the ground, stops and waves its wings, then walks along waving its wings, making little flights into the air and then again walking along flapping its wings; in these cases, the pretence of injury has degenerated into a mere form. Again, the bird will fly near the ground as if intending to

* Concluded from Vol. XXXIX, p. 474.

make a demonstration, but instead it flies up again and alights on a tree. Other Doves merely fly to another tree without showing any trace of this "broken wing" instinct.

In 1919 I kept few notes on this phenomenon; in 1920 I recorded the nests at which it occured but not always at which visit, but in 1921 I became interested and kept full records, making special visits to particular nests for data. Our impression had been that it was largely an individual characteristic, that a few Doves always showed it when frightened from the nest and that most Doves never exhibited it. What stimulated us to more thorough investigation of this problem was reading Dr. J. Grinnell's[63] statement that "Probably as with other birds this ruse comes into use chiefly towards the end of the incubation." What we tried to find out was what proportion of the Doves showed this instinct, whether it was influenced by the stage of the nesting cycle, and finally, if one bird of a pair showed it, whether the other did too.

Our results follow for the 13 nests in 1919 and 1920 where this ruse was shown.

1919. In one case the female demonstrated when one young bird was newly hatched. The other nest A was visited 11 times from the date when the first egg was laid; there was no demonstration until the young bird was nine or ten days old at which time the female feigned injury; three days later both parents demonstrated with great vigor.

1920. Three nests contained eggs, in two cases these were fresh. Two of these birds were joined by their mates. Two nests could not be examined but must have contained eggs or small young. Two nests had medium-sized young. In one case the young had left their nest and were resting on the ground. In nest 23 both parents demonstrated separately both with eggs and young. In Nest 119, on August 25, the female merely flew away from the eggs; on September 8 the male demonstrated with large young and was joined by his mate. In Nest 2 there was no demonstration with eggs, but there was with young at three visits. The results from these two years are not extended enough to warrant conclusions.

The 22 nests in 1921 where this ruse was exhibited may be classified in four divisions.

---

[63] Loc. cit., p. 597.

Four nests visited when containing eggs only.

Nest 16: female demonstrated with fresh eggs.

Nest 50: female demonstrated with eggs May 9 and 14.

Nest 87: male demonstrated on May 29 with fresh eggs, but on June 1 female *did not.*

Nest 96: female demonstrated with fresh eggs.

Five nests visited when containing young only.

Nest 14: male demonstrated April 23, with middle-sized young; female demonstrated April 26 and 30 with large young.

Nest 43: both parents demonstrated with large young which were frightened from the nest.

Nest 44: both parents demonstrated with large young.

Nest 54: male demonstrated May 29 with small young; female demonstrated on June 1 and was joined by her mate.

Nest 117: female demonstrated with middle-sized young.

Two nests where ruse was shown with both eggs and young.

Nest 34: female demonstrated May 9 with eggs; May 12 she did so with tiny young; May 14, male flew near the ground but did not alight and go through the performance; May 15, male demonstrated and later in the day the female also; May 20, male flew low but did not alight and feign injury. In this case the male's conduct is unusual, as the instinct was less strong at the last visit.

Nest 48: female demonstrated May 9 with eggs; May 14, male flew low but did not actually demonstrate with eggs; May 15 and 20, male's conduct was the same with young; May 23, female demonstrated and May 24, male did so. Here the behavior of the male would place him in the next category.

Eleven nests where this ruse was not shown with eggs but was with young.

Nest 1: March 23 and 24, with eggs and April 5 with tiny young, female merely flew away; April 8 she flew low as if intending to demonstrate but did not do so; April 13 with eight and nine day old young she did demonstrate and again on April 15.

Nest 5: April 5, with eggs, female flew near the ground but did not actually demonstrate; April 26 with middle sized young she did demonstrate.

Nest 11: April 23, 26 and 28 with eggs there was no demonstration by the female; May 4 with newly hatched young she did demonstrate.

Nest 20: April 30, May 4, 9 and 11 with eggs, and May 14 with tiny young, there was no demonstration by the female; May 18 with four and five day young she demonstrated and again the next day; May 20 the male did so.

Nest 24: April 30 with one egg, female merely flew away; May 9, with two eggs she flew low as if intending to demonstrate, but did not do so; May 15, with tiny young, she did demonstrate; May 24, male did so with large young.

Nest 25: May 4 and 12 with eggs, May 14, 15 and 17 with tiny young, there was no demonstration by either parent; May 21, female demonstrated with five and seven day young; May 22, she repeated the performance and was joined by her mate; May 23, she did so again, and May 24 and 25, the male demonstrated.

Nest 27: April 30 and May 9, there was no demonstration by female with eggs; May 15, male demonstrated with a young bird about five days old; but May 17, he merely flew away. This is another exception like Nest 34.

Nest 31: visited three times with eggs, no demonstration by female; with large young, male demonstrated

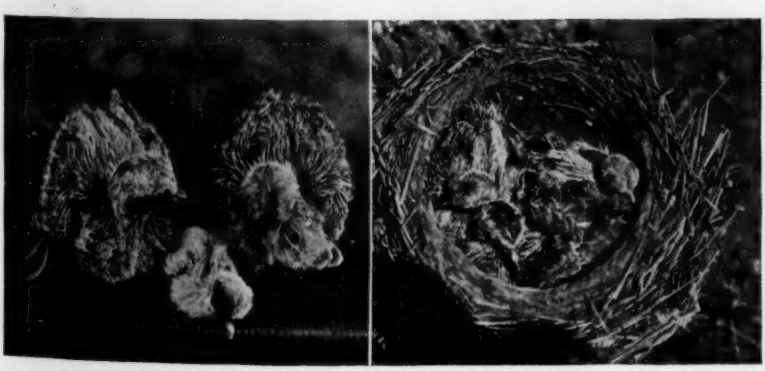
Nest 32: May 4 with eggs and May 12 with small young, there was no demonstration by female; May 16, with middle sized young, male demonstrated.

Nest 38: May 4, with eggs there was no demonstration by female; May 25 with large young, male demonstrated.

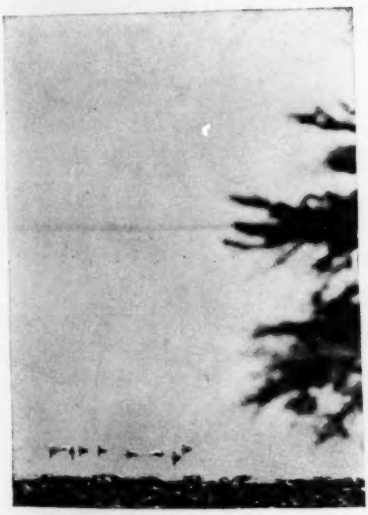
Nest 53: May 15, with eggs there was no demonstration by female; May 29, with small young, male flew low but did not actually go through the performance; May 30, female demonstrated.

Thus this ruse was shown as follows in 1921: At four nests with eggs (not visited subsequently); at two nests both with eggs and young; at five nests with young (not visited previously); and at eleven nests, not with eggs, but with young.

It will be seen that a few Doves showed this instinct throughout



1 and 2. Portions of the Mourning Dove Grove February, 1921.
3. Three young Doves from one nest, six, one and seven days old.
4. Three young Doves in old Robin's nest, eight, seven and six days old.



PHOTOS BY HARRISON F. LEWIS. PUBLISHED BY PERMISSION CANADIAN NATIONAL PARKS

1. Common Murre rushing forth from nesting crevice. St. Mary's Islands, P. Q. July 5, 1921.
2. Eider Ducks courting. Greater Birch Island near Mingan, P. Q June 9, 1921.
3. Puffins on ledge, Perroquet Island, Bradore, P. Q. July 10, 1921.

the nesting cycle. As the birds that showed it with eggs would probably have also shown it with young (we never found an exception to this), we have six of the total 22 that doubtless fall in this category, and as one or two of the five pairs visited with young only, would probably have shown it with eggs, we get a possible seven or eight in this class, or about one third of the pairs that demonstrated in 1921.

With the majority of our Mourning Doves this instinct increased as the nesting cycle advanced; of 17 pairs visited in three years, with both eggs and young, 14 exhibited it when they had young but not when they had eggs. We have not found a single instance of the contrary, where a bird showed it with eggs and not with young. This increasing concern over the welfare of the brood is shown especially well in Nests 1, 20 and 25 which were visited often enough to show that it was not until the young were half grown that this instinct appeared in the parents. If we consider the individual birds rather than the pairs, we find that in nine cases (Nests 1, 5, 11, 20, 24, 25, 53, A in 1919 and 119 in 1920) the females did not demonstrate early in the nest cycle but did so late and in two cases (Nest 25 and 48) the male showed the same increasing zeal. There were just two exceptions, in Nests 27 and 34 at the last visits the males failed to demonstrate after they had done so previously with young.

Dr. A. Wetmore[64] found much the same thing true with the White-winged Dove in Arizona: "When females were flushed from the nests containing fresh eggs usually they flew directly away with a loud *clap, clap,* of their wings. When incubating or brooding young the procedure was often different. Then they dropped to the ground and fluttered rapidly away continually falling forward as though injured, while moving the partly spread wings tremulously." Dr. Wm. Ralph[65] describes the behavior of the Ground Dove as follows: "When one is driven from a nest containing eggs it will drop to the ground as if shot, and will then flutter around as if wounded, to try to draw the persons disturbing it away from the nest, but, whether it succeeds or not, it will soon fly off. When a nest contains young, however, the bird will

[64] Condor, XXII, 1920, p. 143.
[65] Cited by Bendire, Loc. cit. 1892, pp. 148–9.

become almost frantic with anxiety, and will tumble around until it appears to be nearly exhausted."

As to the numbers that showed this reaction, in 1920 we frightened Doves from 50 nests; one parent from eleven of these nests or 22 per cent showed this "broken wing" instinct; three of these birds were joined by their mates in this demonstration. In 1921 one or both parents of 22 out of 76 nests from which Doves were frightened, or 29 per cent feigned injury. From these figures it would appear that only one-fifth to one-third of our Mourning Doves here showed this reaction. But when we consider that this ruse is most common when the young are from half to nearly grown, we must inquire in how many cases with middle-sized or half-grown young this instinct was shown and how often it was not. In 1920 in six such cases it did appear, in fourteen it did not; in 1921 in eighteen it did appear and in twelve it did not. (I believe that in 1920 we might have missed some cases, because sometimes a bird flies some distance before alighting and going through the "broken wing" performance, and since we were not looking out for it particularly we may not always have observed it.) Our figures show that from 30 to 60 per cent exhibited this instinct near the end of the nest cycle.

About the middle of May 1921 it occured to us to find out whether, when one parent showed this ruse, the other would too.

Our records show more data for the females because most of our trips were taken in the late afternoon when they were on the nests.

In fourteen nests during the three years both parents demonstrated.

In ten nests the female demonstrated, the male not being tested at all.

In four nests the male demonstrated, the female not being tested at the same stage of the nesting cycle.

In one nest (No. 53) the female demonstrated, while the male merely flew near the ground.

In one nest (No. 87) the male demonstrated with fresh eggs, while the female did not.

Our results seem to show that if one parent shows the "broken wing" instinct, the other probably will. We have only two

negative cases where parents were tested at the same stage, and in these the other parent might have shown this instinct later. In Nests 34 and 48 the females showed this instinct earlier and more strongly than their mates. In eight cases a parent was joined by its mate in the demonstration, twice with eggs and six times with young. Here again we see greater concern over the young than the eggs.

What is the explanation of this similar action from both birds of a pair, is it imitation, mere chance, or a matter of birds of like tendencies mating? Imitation might account for half the cases where both parents demonstrated: that is, the five instances where the birds were seen to demonstrate only together, and Nests A and 25 where the females first exhibited this ruse alone and upon later occasions were joined by their mates, in the latter case the male doing it still later by himself. But the six cases where the birds demonstrated only separately (when the mate was not seen by us) and also in Nest 54 where the male demonstrated one day and on another the female took the initiative and was joined by him, are more difficult to explain. They seem too numerous to be attributed to mere chance.

Our conclusions are (including observations on 43 nests in 1922) that here in Norman about one-third of the Mourning Doves never show the broken wing instinct. About one-sixth show it throughout the nesting cycle, beginning with fresh eggs, while about one-half show it with middle sized or nearly grown young; thus, typically it increases with the advance of the nesting cycle. If one of a pair shows this instinct, the other usually does.

7. THE BREEDING SEASON.

Late and Early Nesting in General. The nesting season of the Mourning Dove is reported in general as continuing until September; the same thing is repeated for particular localities from Michigan, Indiana, Ohio, Arkansas, Oklahoma, Louisiana and Texas. As for definite instances I have been able to find reports of seven cases of September nestings in Iowa, two from South Dakota, one from Colorado, "several" from Ohio, one each from

New York, Pennsylvania, Kansas, New Mexico and Arizona, five from California, three from Oklahoma, and ten from Texas.

Nests later than September must be considered exceptional, for although Mr. Wm. S. Taylor[66] says of Texas that in October "nests are often found," I have seen only four definite instances of very late nestings: one from California[67]—2 eggs, December 5, 1911—and three from Texas, reported by Mr. H. P. Attwater in a letter as follows: in Bexar County, October 9, 1900, two young just hatched; in Aransas county, November 27, 1890, two fresh eggs, and in Bexar County, December 20, 1899, two eggs.

Mourning Doves usually begin nesting in April throughout most of their range but Capt. Bendire[68] says: "The nesting season begins about the middle of March in Florida and other Southern States." I have found only two January records, one from Texas[69]—January 26, 1895, and the other from California[70]—January 18, 1920. Three February nests from Texas and five from California have been reported. Except for California there are few reports of March nestings; one each from Louisiana, Mississippi, Tennessee and Texas, two from Arizona and three from Indiana. There are eleven cases from California, two of squabs and the rest of eggs.

8. The Breeding Season at Norman.

Mourning Doves arrive here in March and leave in late September and early October, although a few are seen all fall and winter; we have records of their occurence for every month in the year. In September they gather to some extent into flocks; on September 17, 1920, I saw 24 together, on October 2, 28 and on October 16 at least 30.

It is a little difficult to be sure in the spring whether a bird is a migrant or one that has wintered with us, but as the latter are usually found near creeks or feeding places for stock, we consider birds that appear on the campus as probably migrants. The

---

[66] Loc. cit., p. 6.
[67] Howell, A. B., Condor, XIV, 1912, pp. 73–74.
[68] Loc. cit., 1892, p. 140.
[69] Attwater, H. P. In a letter.
[70] Fortiner, J. C. Condor, XXIII, 1921, p. 168.

earliest seen in 1920 was March 11 and in 1921, March 1. In 1920 they became abundant the last of March; in 1921 apparently they were delayed by the cold weather in late March and did not become common until April.

The first "coo "was heard in 1920 on March 11, and in 1921 March 6. The height of cooing occurs from the last of March or early April till the middle or latter part of May. In July 1920 very little cooing was heard, and in August almost none. In September we heard only one full "coo" of four notes; that was on September 8. On September 1 and 2, "coos" of only three notes each were heard and on the 8, one of two notes and two or three of only one.

Early and late nesting. At Norman the Dove's nesting season lasts from six to seven months, from late March through September and sometimes into October. This is a longer season than any other bird here; the English Sparrow starts earlier but stops earlier; the earliest young of this species we have found were about a week old March 20, 1920, and the latest were about the same age on August 22, 1920. In 1920 we know of two Dove nests that were built in March; in one the eggs were probably not laid until April and as to the other we do not know, it contained two eggs when found April 3, but was deserted a few days later. In 1921 there was one nest containing a full set of eggs March 22. By the end of April in 1920, 37 nests had been found by us on the campus, and 51 more were seen during May. In 1921 due to the cold weather in early April, the Doves were later in getting started so that we located only 27 nests by April 30; in the next month we found 88; this increase over 1920 was probably due to more time spent on searches and more of the campus being covered.

As to late nestings Table VII gives the number of nests found by us in Norman in September and October from 1919 to 1921.

TABLE VII.

September and October Nests of Mourning Doves Found in Norman. The date is the latest at which each nest was seen to be occupied.

1919

Sept. 1: 2 young leave nest.	Sept. 4: 2 young.
Sept. 4: 2 eggs.	Sept. 4: 2 large young.
Sept. 4: 2 eggs.	Sept. 4: parent incubating.
Sept. 4: 2 young.	Sept. 11: parent incubating.

TABLE VII. (*Continued*).

1919	1920
Sept. 16: 1 young.	Sept. 5: 2 young.
Sept. 16: 2 large young.	Sept. 8: 2 young ready to fly.
Sept. 16: 2 young leave nest.	Sept. 8: parent incubating.
Sept. 16: 2 fresh eggs.	Sept. 8: parent incubating.
Sept. 16: 2 large young.	Sept. 8: 2 young recently out of nest.
Sept. 16: 2 young ready to fly.	Sept. 8: 1 young ready to fly.
Sept. 17: 2 large young.	Sept. 12: 1 young.
Sept. 18: 1 large young.	Sept. 12: 2 young.
Sept. 18: 1 large young.	Sept. 12: 1 young ready to fly.
Sept. 18: 2 large young.	Sept. 12: 2 young.
Sept. 18: 2 large young, 1 flies.	Sept. 12: 2 young.
Sept. 19: 1 young ready to fly.	Sept. 12: 2 young.
Sept. 22: 1 large young.	Sept. 12: 2 young recently out of nest.
Sept. 23: 1 young ready to fly.	Sept. 17: 2 young leave nest.
Sept. 23: 2 young leave nest.	
Sept. 28: 2 large young.	1921
Sept. 28: 1 young ready to fly.	
Oct. 1: 1 young 12 or 13 days old.	Sept. 10: 2 young ready to fly.
	Sept. 16: 1 young ready to fly.
Oct. 1: 2 young 12 and 13 days old.	Sept. 18: 2 young being fed by parents.
	Sept. 20: 2 young ready to fly.
Oct. 1: 2 young 8 or 9 days old.	Sept. 22: 2 young being fed by parents.
	Sept. 22: 2 young being fed by parents.
	Sept. 26: 2 young being fed by parents.
	Sept. 27: 2 young leave nest.

In 1919 we found 34 occupied nests in August, 28 in September and three in October, 42 different nests in all. Four of these contained eggs as late as September 18 and one must have had eggs as late as September 22. Three broods of young Doves left the nest during the first week in October.

In 1920 the Doves did not nest so late. We found 31 nests in August and 14 in September. The last young birds flew September 17.

In 1921 we spent the summer away from Norman, not returning until September 9, so we undoubtedly missed some of the nestings that ended early in the month. We found four occupied nests and four broods of young still being fed by their parents (from the 18th to the 26th), making eight in all. The broods from the two latest nests left as follows: one soon after September 20 and the last September 27.

The finding of so many September nests, once we began to search for them, leads us to believe that such late nesting is more common throughout the breeding range of this species than has generally been reported.

Number nesting in different months. Since it would have been a gigantic task adequately to search the 120 acres of the campus or even half of it for Dove nests throughout six months, we specialized on one area of about seven acres in extent. This consists of two groves; one, which we called S, is square and contains about five acres; it is planted with about 160 elms and locusts rather far apart. The other is triangular and hence designated T; it contains about two acres and the 136 trees, which are all elms, are crowded together.

Table VIII shows the number of nests found in this area each month from August to October 1919, from April to September 1920 and from March through May, and also September 1921.

TABLE VIII.

NUMBER OF NESTS EACH MONTH IN S AND T.

	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Total*
1919 T.	..	..	..	..	..	3	3	1	4
S.	..	..	..	..	..	14	10	1	19
Whole.	..	..	..	..	..	17	13	2	23
1920 T.	0	7	16	6	0	0	0	0	28
S.	0	3	8	13	15	10	3	0	35
Whole.	0	10	24	19	15	10	3	0	63
1921 T.	1	7	23	..	..	..	0	..	27
S.	0	3	18	..	..	..	4	..	22
Whole.	1	10	41	..	..	..	4	..	49

In 1920 there is an increase in the number of nests from April to May and then a gradual decline each month till fall. May appears

* Some nests were occupied during parts of two months and were counted under each. These double countings had to be adjusted in arriving at the actual totals.

to be the height of the nesting season. This is shown also in Table IX which gives the numbers of different nests found at various dates in the area in 1920.

TABLE IX.

NUMBER OF DIFFERENT NESTS AT VARIOUS DATES IN S AND T IN 1920.

Date	Apr. 18	May 13	June 22	July 31	Aug. 13	Sept. 8
T	3	15	1	0	0	0
S	2	5	10	6	7	2
Whole	5	20	11	6	7	2

In 1921, the largest numbers of different nests found in the area were as follows: May 9, 15 nests (10 in T and 5 in S); May 15, 19 nests (11 in T and 8 in S); May 29, 17 nests (11 in T and 6 in S). Mr. J. C. Fortiner[71] on an acre in California found Mourning Dove nests increasing from one in January, two in February and ten in May to sixteen in June; then decreasing with seven in July and five in August to one in September. Dr. J. Grinnell[72] says, "Thirty-two of the sixty-six nestings recorded in California were observed between May 20 and June 18, which period probably represents the height of the breeding season."

On May 15, 1921, we hunted over most of the north 60 acres of the campus and located 48 occupied Dove nests. Probably there were about 60 pairs nesting in this area. The most thickly populated place so far as Dove nests are concerned that we have ever found, was the two acre grove T, on May 13, 1920, at which time it contained fifteen occupied nests.

Seasonal differences in S and T. A seasonal difference in the use of S and T is shown in Tables VIII and IX. T, where the trees are all elms and crowded together, is the most popular place on the campus for Dove nests, in April and May, but it is hardly used at all from July on. S, which is planted equally with elms and locusts rather far apart, is little patronized in April but becomes increasingly favored, so by July (1920) all the Dove nests in the area had shifted to it. Here again there appears to be adaptation

[71] Loc. cit.
[72] Grinnell, Bryant and Storer. Loc. cit., p. 594.

for the purpose of protection, the Doves preferring the wooded environment in early Spring and the more open space during summer and fall.

That the Doves were justified in their preference for T in the Spring is shown in Table X.

TABLE X.

SUCCESSES AND FAILURES IN S. AND T. DURING APRIL AND MAY

	T				S			
	Number		Per Cent		Number		Per Cent	
	Successes	Failures	Successes	Failures	Successes	Failures	Successes	Failures
1920	2	9	17.2	81.8	0	5	0	100.0
1921	8	10	47.8	52.2	2	7	22.2	77.8
	10	19	34.5	65.5	2	12	14.2	85.8

It is evident that T was a safer place in which to nest than S in April and May both in 1920 and 1921, since a third of the nests whose fate was known succeeded in T and only one-seventh in S.

In August and September 1919 the proportion of known successes and failures in both groves were equal, for in T there were two successes and one failure, and in S seven successes and four failures; thus two-thirds of the nests succeeded in each place. In other years we have no data for T for these months as no Doves were found nesting there.

9. THE HUNTING SEASON.

According to the Game Laws for 1921[73] Mourning Doves are protected entirely in 25 States and allowed to be shot in 23. In these latter the season opens September 1 in fifteen States, September 16 in one, October 16 in five and November 20 in two. To protect the birds fully through the breeding season, they should not of course be shot in early September, but as they start their migration at this time in many States, hunters object that they would get no shooting under this plan. At any rate it seems as if Texas, where the birds winter, should be put among the States with the open season beginning October 16. Messers Quillin and

[73] Farmers' Bulletin, 1235, U. S. Dept. Agr. 1921.

Holleman[74] say, in regard to Bexar County: "This species is rapidly decreasing, owing to the hunting season on Doves opening on September 1, at which time thousands of young are still in the nests, where they starve when the parents are shot by so-called sportsmen. It is expected the opening date will be changed to November 1, at the next meeting of the Legislature." This, however, was evidently not done.

The situation in Oklahoma is as follows: until 1913 there was an open season from August 15 to May 1; after that the Doves were protected entirely for four years during which time they greatly increased. In 1917 all protection so far as the State law goes was taken from them. By Federal law the open season extends from September 1 to December 15. Of course the State should pass a law conforming to this, so that the State game wardens would be responsible for enforcing it.

10. NATURAL ENEMIES.

That the Mourning Doves' powers of swift flight render the adults comparatively immune from the attacks of the Raptores seems to be the general opinion. Dr. A. K. Fisher[75] found remains of Mourning Doves in only nine out of 2,690 stomachs of Hawks and Owls taken from all over the country. Dr. Grinnell[76] says, "On the whole Doves are probably much more immune from natural enemies than are Quail or Grouse," and Mr. A. Leopold's[77] experience in New Mexico agrees with this.

As to the enemies of the eggs and nestlings, Mr. Robert Ridgway[78] tells that on his place in southern Illinois, Blue Jays killed "even half-grown young of the Mourning Doves and destroyed the eggs in fully ninety per cent of the first nests built." Mr. Wm. Gates [79] considers snakes and large wharf rats the worst enemies of these birds in Cameron, Louisiana.

On the University grounds at Norman, Doves seem to have few natural enemies People interfere little as no shooting is allowed

[74] Condor, XX, 1918, pp. 39–40.
[75] Hawks and Owls of the U. S., 1893.
[76] Grinnell, J. Bryant, H. G., and Storer, T. I. Loc. cit., 1918, p. 599.
[77] Condor, XXII. 1921, p. 20.
[78] Bird-Lore, XVII, 1915, p. 100.
[79] Bull. 14. Gulf Biol. Sta. Cameron, La. 1909, pp. 15–17.

and the workmen keep an eye out for boys who appear malicious. Blue Jays are not common, only three or four pairs nesting on the campus each season. Bronzed Grackles build there in large numbers, especially in T, but we have never seen any evidence of their disturbing the Doves; sometimes, indeed both species nest in the same tree. On August 25, 1920, a Cooper's Hawk caused all the Doves in sight to flee but we did not see it capture any. We have never seen a snake on the campus nor a rat outside of the buildings. June 1, 1920 we found an Opossum asleep in a Grackle's nest in T and we thought he might have been responsible for some of the many empty Dove nests in the vicinity.

Cats are probably the worst enemies of our Doves; the landscape gardener says they come over from neighboring houses and execute great slaughter among the nesting birds. An instructor reports that one cat living next the campus "brought home a Dove every day all summer."

In the spring of 1920 storms were among the most potent factors in the destruction of Dove nests: on April 22 we knew of nineteen occupied nests, on the 24th and 25th there were heavy, cold rains, and on the 27th, fourteen of these nests had been destroyed or deserted. In the spring of 1921, however, there were no such disastrous storms.

Numbers of successes and failures. In nearly half of the nests recorded—141 out of 306—the outcome was known. The numbers that were known to have succeeded or failed in the three years are shown in Table XI.

TABLE XI.

SUCCESSES AND FAILURES OF DOVE NESTS.

	Numbers		Per Cent	
	Successes	Failures	Successes	Failures
August and September, 1919	15	7	68.2	31.8
April to September, 1920	18	41	30.5	69.5
April, May and September, 1921	28	32	46.7	53.3
	61	80	43.2	56.8

In August and September 1919, two-thirds of the nests whose fate was known succeeded, throughout the year of 1920 three-tenths were found to have done so, while in the spring and fall of

1921 nearly half brought young to maturity. The sum of the three years gives us 61 successes and 80 failures, or 43 per cent of the former.

In half of the failures, the nests were found empty, in three-eighths they had been destroyed and in only eight were deserted eggs in the nests. Five of these last instances occurred in August and September 1919; two possible explanations suggest themselves: the nesting instinct may have waned at this late date before the young were hatched—Miss Sherman[80] gives an instance of this; or some of the parents may have been shot.

In 51 of the 80 failures, the nests were known to have contained eggs, in 26, the stage of the nesting cycle was unknown, while in only three nests were young known to have come to their ends. Possible reasons for this unequal proportion may have been: first, most of our observations were taken at the beginning of the nesting season when the nests, of course, contained eggs; second, the disastrous storms in April 1920 occurred when all but two of the nests had eggs; third, eggs are more easily blown out than young; and finally, if a nest proved itself capable of holding eggs and a parent, it probably would be able to hold at least one young bird to maturity.

What relationship do different factors hold to the successes and failures of these nests; for instance is there a correlation with the kind of trees chosen, the height of the nests from the ground, the use of the nests of other birds, the position of the nests on branches or in crotches, the location in a thickly planted grove of elms or a thinly planted one of locusts and elms, or finally with the season?

In the first two cases there seems to be no special correlation. The nests succeeded and failed in about the same proportion in all kinds of trees. As to the height from the ground, in 1920 the average height of 14 successful nests was 9.4 feet and of 40 unsuccessful nests, 13.1 feet; in 1921 the average height of 25 successful nests was 13.8 feet and of 32 unsuccessful ones 13.2. The low average height of the successful nests in 1920 probably does not mean that a lower nest was safer than a higher, but merely that there were too few of these nests to get a reliable average;

[80] Auk, XXX, 1913. p. 412.

in the other three results where from 25 to 40 nests were involved, the average height of successes and failures in both years proved to be the same as the average of all the nests found.

The use of other birds' nests proved highly successful in 1921, but no advantage accrued to the Doves that used them in 1920. Nests in crotches were nearly twice as successful as those on branches. Nests in the thickly planted elm grove T met less than half as many disasters as those in the sparsely planted elm and locust grove S in two springs, but successes and failures were equal in both places in August and September, 1919.

As to the relation with the season, Table XII shows that many more failures were found in the early nests than in the late ones.

TABLE XII

SUCCESSES AND FAILURES OF DOVE NESTS IN RELATION TO THE TIME OF YEAR.

	April		May		June		July		Aug.		Sept.		Oct.	
	S	F	S	F	S	F	S	F	S	F	S	F	S	F
1919									4	2	8	5	3	0
1920	1	17	6	17	1	6	0	0	4	1	6		0	0
1921	1	5	19	27							8	0	0	0
	2	22	25	44	1	6	0	0	8	3	22	5	3	0

There are probably several factors that account for this: one is the weather—the greater likelihood of severe storms in April; another is that probably more natural enemies are abroad early in the season than late, partly because they have their own offspring to feed, and partly because they do not expect nests so late; and finally, many April and May nests are first attempts of birds hatched the year before; it is possible that these are frailer than others and that the birds increase in skill as the season advances.

Number raised in the nest. The number of young Doves raised in all the successful nests is shown in Table XIII.

TABLE XIII.

NUMBER OF YOUNG DOVES RAISED IN A NEST.

Year	2 young	1 young	3 young	Average in Each Nest
1919	9	6	0	1.6
1920	12	6	0	1.7
1921	18	9	1	1.7
	39	21	1	1.7

The similarity in the proportions found each year is very striking —one third of the nests raised only half their proper quota. Interestingly enough these figures are corroborated by the work of Mr. Gates[81] in Louisiana, for of the thirty-one successful nests recorded by him twenty raised two birds and eleven only one, so they averaged 1.7 to the nest.

In only two instances, both in 1921, were infertile eggs found in nests. In most of the cases where only one bird was raised, the probability is that the other squab fell out on account of the frailty of the nest, for if some enemy had been responsible, would not both have been taken?

Number of broods. The nesting cycle of Mourning Doves according to Mr. Frank Burns[82] lasts from 30 to 32 days. In nine cases with Dr. Whitman's[83] captive birds of this species, the time elapsing between the laying of the first egg of one brood, successfully raising this brood and laying the first egg of the next brood varied from 27 to 35 days, the average being 31 days.

The very long nesting season indicates that many broods are at least attempted. Dr. Whitman's experience is instructive here; he had six pairs of these birds, one pair of which raised young for four years, the others being reported for only one year each; thus there are records for 9 seasons. The number of broods attempted varied from 2 to 7, averaging 4.4; the number of successes varied from 1 to 3, averaging 2.2; and the number of months spent in breeding varied from 2 to 5, averaging 4.1.

A breeding season of three months gives time for three successful

[81] Loc. cit.
[82] Loc. cit., p. 91.
[83] Inheritance, Fertility, and the Dominance of Sex and Color in Hybrids of Wild Species of Pigeons, II, pp. 117–118.

broods. Apparently all of our Doves here do not nest as long as this or there would be as many nesting in June as in May which does not seem to be the case. Practically all the Doves here are nesting by May 1, for no more cooing is then heard after nine in the morning showing that the males are on the nests. Some pairs perhaps breed for two months, through April and May, or through May and June; others probably breed three months, and some must nest for a longer period, either continuously or with intermissions, or how shall we account for the August and September broods?

Mr. Leopold[84] found from three years hunting of these birds in New Mexico that "after the main squab crop has issued forth, the young birds are just as numerous, or slightly more so, than the adults. *The yearly increase is therefore 100%.*" We can calculate from the figures found in our study how many broods the Doves have to attempt in order to double their numbers by fall. If 40 per cent of the nests succeed and each successful nest averages 1.7 birds, then each pair has to average three attempts in order to double yearly: $40\% \times 3 = 1.2$ successful nests. $1.2 \times 1.7 = 2$ birds raised.

If they do not double yearly the number of failures is probably greater than 60 per cent. If they more than double, the number of successes is greater than 40 per cent, or more than three broods are attempted, or, in places where they nest upon the ground, one-sixth of the nestlings would have no chance of falling out.

Thus from these various sources, the short nesting cycle and long period of breeding, the behavior of Dr. Whitman's captive Doves, and finally the abundance of these birds despite frail nests and a clutch of two eggs, it seems probable that Mourning Doves average at least three broods a year.

11. CONCLUSIONS.

In some cases the 1921 figures are almost the same as those of 1920 but in others there is a wide difference. Perhaps a word of explanation as to my methods should be given. I went at this problem with no theories, simply recording results; in the fall of

[84] Loc. cit., p. 19.

1920 upon classifying my data I did evolve a few tentative generalizations. The next year I again went to work recording facts about nests but not working up my material until the fall. The corroboration of certain data has been surprising to me, but, on the other hand, several of my theories deduced from results of 1920 have had to be modified.

The facts stand thus: in an unchanged environment we found that when dealing with such large numbers of nests, these birds acted in much the same way in two succeeding years. The disturbing factor was the weather: the low temperatures in early April 1921 which killed the locust buds and delayed the birds in starting to nest, and especially the storms in late April 1920 which destroyed the majority of the early nests. Most of the factors that have proved to be uniform are those depending on the environment independently of the weather.

The instances of greatest uniformity in the two years relate to the position of the nests: the average height at which the nests were built; the numbers of nests in crotches and on branches throughout the season; the different proportion of these positions in April; the percentage of nests built on others and the proportion of such nests found in April. All these depend upon the opportunities offered the Doves for building and these have remained practically unchanged.

The majority of the nests that were placed on branches were built later than April and hence the weather conditions were fairly uniform in 1920 and 1921; we find their percentage of successes and failures almost alike in both years.

The proportions that have proved to be markedly different in the two seasons can be largely traced to weather conditions; the choice of fewer locusts as nesting sites in 1921 and the variation in the successes and failures of the nests built in crotches and of those on other nests, both of which classes were, for the most part, built in April.

Another stable proportion is the number of Doves raised in a nest; this doubtless depends to some extent on the environment, although the same proportion was found in Louisiana, but it is probably largely due to the innate inability of the Mourning Dove to build an adequate nest.

Mourning Doves are birds of very wide distribution, being known to breed in every State in the Union. Although they are shot in large numbers throughout the southern part of their range, they seem to hold their own and in a great many places are reported as common or abundant. Mourning Doves have several disadvantages in the struggle for existence: first, they lack intelligence; second, their clutch consists of only two eggs; and third, they build such frail nests that heavy storms destroy them or half of their brood may be crowded out. They seem to have compensated for these disadvantages in three ways: first, their powers of swift flight help them to escape enemies; second, their adaptability enables them to live in a wide range of environment and finally their very long season of nesting counterbalances the few eggs and poor nests.

SUMMARY.

1. The height from the ground of 122 nests in 1920 averaged 13.3 feet and of 118 nests in 1921, 14 feet.

2. Both years two-thirds of the nests were placed on horizontal branches and only one-third in crotches, yet in April the numbers in both positions were about equal. Twenty-seven to 30 per cent of the nests on branches succeeded, while 40 to 68 per cent of those in crotches were known to have done so.

3. Both years 15 per cent of the nests were built on top of other nests and in both years two-thirds of such nests occurred in April. In 1920, only one-sixth of these succeeded due to April storms; but in 1921, two-thirds succeeded, all of them raising their full quota of squabs.

4. In 1917 we found a nest containing two squabs and an egg. In 1921 we traced the history of two nests with three eggs from the beginning to the time the young left the nest; all the eggs hatched and five of the birds were raised to maturity.

5. The average age of leaving the nest of 16 birds was 13.4 days.

6. Some Doves, at least 30 per cent, never exhibited the "broken wing" ruse; a few showed it throughout the nesting cycle, but most exhibited it only when the young were half or nearly grown.

7. The nesting season lasts in Norman from late March to late September or early October.

8. In September 1919 we found 28 occupied Dove nests, four containing eggs as late as September 18, and one September 22; the last young Doves left the nest during the first week of October. In 1920 we found 14 nests in September, the last birds leaving September 17. In 1921 we saw eight broods in September, the last leaving the nest September 27.

9. Sixty-one nests were known to have succeeded and 80 to have failed. The majority of early nests were failures and the majority of late nests were successes.

10. Thirty-nine nests raised two young, twenty-one raised one young and one raised three; an average of 1.7 young for each nest.

Norman, Oklahoma.

A REVIEW OF THE GENUS CYANOCOMPSA.

BY W. E. CLYDE TODD.

A STUDY of the series of specimens (193 in all) of the Fringilline genus *Cyanocompsa* in the collection of the Carnegie Museum, in connection with pertinent material from other sources, shows that certain changes in the systematic arrangement of the forms composing the group are desirable. It is the object of the present paper to bring these proposed changes to the notice of other ornithologists, with a view to clearing up the confusion in which the members of this genus seem to have become involved. While it has been thought best to restrict the synonymy to a citation of the first reference for each name, it is hoped that the statements defining the respective ranges of the several forms, and the remarks in connection therewith, may suffice to properly allocate all the published records. Measurements, where given, are in millimeters, and unless otherwise stated are the average of a series of specimens. The names of colors are from Mr. Ridgway's 'Color Standards and Color Nomenclature.' Acknowledgments are due to the authorities of the American Museum of Natural History, the Museum of Comparative Zoology, the U. S. National Museum, and the Bureau of Biological Survey for their courtesy in the loan of specimens.

Genus **CYANOCOMPSA** Cabanis.

Cyanocompsa CABANIS, Journ. f. Orn., IX, 1861, 4 (Type, by original designation, *Fringilla parellina* Lichtenstein, MS. = *Cyanoloxia parellina* Bonaparte).

The oldest known member of this group is the *Loxia cyanea* of Linnæus, 1758, of which name *Fringilla brissonii* of Lichtenstein, 1823, is a synonym. Next came the *Coccoborus cyanoides of* Lafresnaye, 1847, and the *Cyanoloxia parellina* of Bonaparte, 1850, which latter was made the type of the new genus *Cyanocompsa* by Cabanis in 1861. In the meantime (1855) DuBus had described *Cyanoloxia concreta* from Mexico, but in listing the forms of the genus Cabanis mentioned only *C. parellina*, *C. cyanea*, and his new species *C. minor*. He failed to secure general recognition for the new generic name, however, most authors ranging the several forms involved under *Guiraca* or its equivalent, down to and including Sharpe in 1888. This author described a race of the *cyanea* group under the name *argentina*, while Bartlett separated *Guiraca rothschildii* two years later. In 1898 Mr. Ridgway inadvertently gave a new name to *C. cyanoides*, which latter he considered to be the same as Bartlett's *rothschildii*, owing to a mixup in Lafresnaye's type-specimens. That very year Mr. Bangs described the Santa Marta bird of the same species as a new race, *sanctæ-martæ*, and in 1901 Dr. Oberholser described *Cyanocompsa sterea* from Paraguay, comparing it with *C. cyanea*. *C. parellina* of Mexico had in the meantime been split up by Mr. Ridgway into three subspecies, to which Mr. Bangs in 1915 added a fourth. Dr. Chapman described a bird from western Colombia as *C. cyanea caucæ* in 1912. There are thus fifteen specific and subspecific names to be considered in dealing with this group. In the present review we recognize three species and eight additional subspecies, two of which are here described as new.

The three specific types included in the group, while resembling each other closely in general coloration, are very different in form and proportions—more so than many other species which by common consent are separated generically. *C. parellina* differs from the other two species in its nearly even tail and much smaller bill, in this respect closely approximating *Passerina*. In fact, the

northern race of *C. parellina*, *C. p. beneplacita*, is so close to *Passerina versicolor*, both in color-pattern and general form, that they could readily be held to be congeneric—and have indeed been so considered by sundry authors. *C. cyanea* has a short, "stubby" bill, suggesting *Oryzoborus*, while in *C. cyanoides* this member is longer and stouter, approaching that of *Guiraca*. Despite these differences, it is probably best to keep all three in the one genus, which may be placed between *Guiraca* and *Passerina*. *Cyanoloxia* Bonaparte (type, *Pyrrhula glaucocærula* D'Orbigny) is doubtless an offshoot of *Cyanocompsa*. The genus as here understood is purely Neotropical, ranging from northern Mexico to Argentina, in the Tropical Zone. The range of *C. cyanea* is discontinuous, but this may be apparent rather than real. The ranges of the several species overlap to some extent, so that over large areas two species occur together.

In the key which follows the aim has been to arrange the forms in what appears to be an orderly sequence. Unless otherwise specified the characters are based on adult males.

KEY TO THE SPECIES AND SUBSPECIES OF CYANOCOMPSA.

A. Bill relatively larger, the exposed culmen not less than two-thirds the tarsus; tail obviously rounded.
  a. Bill relatively more elongated, much longer than deep, the exposed culmen nearly or quite equal to the tarsus; female deep brown. (*Cyanocompsa cyanoides*).
    b. Male darker and duller blue; female deeper brown.
      c. Darker (bluish black to dusky slate blue).
        d. Bluish black, the forehead scarcely brighter, the throat and sides of the head blackish. *Cyanocompsa cyanoides concreta.*
        d'. Dusky slate blue, the forehead brighter, the throat and sides of the head distinctly bluish. *Cyanocompsa cyanoides cærulescens.*
      c'. Brighter (indigo blue, brighter on the forehead and lesser wing-coverts) . . . . . *Cyanocompsa cyanoides cyanoides.*
    b'. Male lighter and brighter blue (Hortense blue); female lighter brown . . . . . *Cyanocompsa cyanoides rothschildii.*
  a'. Bill relatively more shortened, almost as long as deep, the exposed culmen decidedly shorter than the tarsus; female buffy brown. (*Cyanocompsa cyanea*).
    b. Larger (wing over 80 mm., tail over 70 mm.).

c. Lower abdomen without white.
Cyanocompsa cyanea argentina.
c′. Lower abdomen with more or less white.
Cyanocompsa cyanea poliogastris.
b′. Smaller (wing under 80 mm.; tail under 70 mm.).
c. Rump duller (deep dull violaceous blue).
Cyanocompsa cyanea cyanea.
c′. Rump brighter (cadet blue). . *Cyanocompsa cyanea minor.*

B. Bill relatively smaller, the exposed culmen little more than half the tarsus; tail nearly even (*Cyanocompsa parellina*).
a. General coloration brighter blue (urania blue to indulin blue).
b. Slightly brighter; bill relatively larger; female richer brown.
Cyanocompsa parellina parellina.
b′. Slightly duller; bill relatively smaller; female duller brown.
Cyanocompsa parellina beneplacita.
a′. General coloration lighter blue (dusky blue).
Cyanocompsa parellina indigotica.

Cyanocompsa cyanoides concreta (DuBus).

Cyanoloxia concreta DUBUS, Bull. Acad. Roy. Belgique, XXII, i, 1855, 150 (Playa Vicente, Oaxaca, Mexico).

Subspecific characters.—Similar to *Cyanocompsa cyanoides cærulescens*, but male darker, more bluish black, the throat and sides of the head distinctly blackish, the forehead scarcely brighter than the crown; slightly larger in size.

Range.—Southern Mexico (Vera Cruz and Oaxaca) eastward to Guatemala and British Honduras.

Remarks.—"*Guiraca concreta* does not appear to be found northwards of the hot forests of the State of Vera Cruz in Mexico, the limit of its range in altitude being, according to Sumichrast, about 2500 feet" (Salvin and Godman). Examples from this region may readily be distinguished from those from Honduras and southward by their darker coloration in the male and slightly larger size. Guatemala and British Honduras birds are not typical, but are best referred here.

Cyanocompsa cyanoides cærulescens, subsp. nov.

Type, No. 28,271, Collection Carnegie Museum, adult male; Esparta, Costa Rica, June 5, 1907; M. A. Carriker, Jr.

Subspecific characters.—Similar to *Cyanocompsa cyanoides concreta*, but male brighter throughout, more dusky slate blue, the throat and sides of the head distinctly bluish, the forehead appreciably brighter than the crown; slightly smaller in size. Similar also to *Cyanocompsa cyanoides*

cyanoides, but decidedly darker blue throughout, and size larger. Wing (type), 86; tail, 73; bill, 21; tarsus, 20.5.

Range.—Honduras to Costa Rica (probably to western Panama).

Remarks.—Costa Rican birds differ from typical *concreta* of Mexico in their brighter coloration throughout in the male, the color being dusky slate blue, a little brighter (Tyrian blue) on the forehead. The throat is a little darker, but never distinctly black, as in *concreta*. Salvin and Godman (Biologia Centrali-Americana, Aves, I, 1885, 346) remarked these differences, and intimated that the Central American bird might prove to be separable. Mr. Ridgway (Auk, 1898, 229, and Bulletin U. S. National Museum, No. 50, I, 1901, 597) also discussed the case, but erred in selecting a type for the southern form from Panama, as well as in considering the birds from that country the same as those from Costa Rica and Nicaragua, whereas they are really the same as those from Colombia. By recognizing the birds from Costa Rica to Honduras as a distinct race we avoid the difficulty in which Mr. Ridgway and later Mr. Carriker (Annals Carnegie Museum, VI, 1910, 884) became involved in trying to determine where they belonged.

Cyanocompsa cyanoides cyanoides (Lafresnaye).

Coccoborus cyanoides LAFRESNAYE, Rev. Zool., 1847, 74, part (Panama; descr. female).

Cyanocompsa concreta cyanescens RIDGWAY, Auk, XV, (May 13), 1898, 229 (Panama).

Cyanocompsa concreta sanctæ-martæ BANGS, Proc. Biol. Soc. Washington, XII, June 3, 1898, 139 ("Santa Marta," Colombia).

Subspecific characters.—General color of male indigo blue, the forehead and lesser wing-coverts somewhat brighter (Tyrian blue). Smaller than either of the other two northern races of this species, with a weaker bill, and general coloration brighter blue.

Range.—From Panama eastward to central northern Venezuela, and southward to western Ecuador.

Remarks.—Lafresnaye's name *cyanoides* was primarily based on a female example from Panama in the Delattre Collection, which later found its way into the museum of the Academy of Natural Sciences of Philadelphia. His description of the adult male tallies with the bird now known under the name *rothschildii*, which circumstance, taken in connection with the fact that the female of a

pair of birds in the collection of the Boston Society of Natural History, erroneously supposed at the time to be Lafresnaye's type, was really a specimen of *Guiraca cærulea*, misled Mr. Ridgway into transferring *cyanoides* to the Guiana bird and renaming the one from Panama. The actual type-specimen, however, is the one in the Academy of Natural Sciences of Philadelphia, as long ago indicated by Dr. Stone (Proceedings Academy of Natural Sciences of Philadelphia, 1899, 51), and later pointed out by Dr. Hellmayr (Novitates Zoologicæ, XIII, 1905, 277). Mr. Ridgway's *cyanescens* is thus a pure synonym of Lafresnaye's *cyanoides*, and the latter being the earliest name applicable to any form of this particular group becomes its proper specific appellation. We are indebted to Mr. Outram Bangs for calling our attention to this fact.

Comparison of a good series from the Santa Marta region of Colombia with another from Venezuela reveals no essential differences, nor do these taken together differ materially from Panama examples. There is certainly no difference in general size, although the bill in the Panama birds seems to average very slightly larger, and the alleged difference in color, to which Mr. Bangs and Messrs. Hellmayr and von Seilern (Archiv für Naturgeschichte, LXXVIII, 1912, 67) have called attention, breaks down completely when a sufficient series are brought together.

Cyanocompsa cyanoides cyanoides is not known from the Cauca Valley in Colombia, but ascends the Magdalena Valley as far at least as El Tambor, in the State of Santander, and has been found also at the eastern base of the Eastern Andes, in the State of Boyaca.

Cyanocompsa cyanoides rothschildii (Bartlett).

Guiraca rothschildii BARTLETT, Ann. and Mag. Nat. Hist., (6), VI, 1890, 168 (Carimang River, British Guiana).

Subspecific characters.—Much brighter blue (Hortense blue) in the male than any of the other forms of this species, the forehead, superciliary and malar regions, and lesser wing-coverts still brighter (mazarine blue). Female appreciably paler brown (Brussels brown above, buckthorn brown below) than in the allied races.

Range.—From Venezuela (south of the Orinoco) and Guiana south to the lower Amazon, and west to the base of the Andes in Peru and Bolivia.

Remarks.—This is a very distinct form, easily distinguished by its much brighter coloration, and is possibly entitled to specific

rank. By most authors, down to and including Sharpe in 1888, it was confused with *Cyanocompsa cyanea*, until distinguished by Bartlett in 1890. In coloration it greatly resembles that form so far as the male is concerned, but females are readily distinguishable, this sex of *cyanea* being much lighter and more buffy brown. The bill of *rothschildii*, however, is of the *cyanoides* type, and its color-characters are merely an exaggeration of those of that form. It enjoys an extensive range in northern and western Brazil, reaching the Orinoco River on the north, but we do not yet know where it meets the range of *cyanoides*. Bolivian specimens seem not to differ by any constant characters from a series from French Guiana and the lower Amazon.

Cyanocompsa cyanea argentina (Sharpe).

[*Guiraca cyanea*] Subsp. *α. Guiraca argentina* SHARPE, Cat. Birds Brit. Mus., XII, 1888, 73 (Argentina; no type-locality specified; Fuerte del Andelgala, Catamarca, fide Brabourne and Chubb).

Subspecific characters.—Similar to *Cyanocompsa cyanea cyanea*, but decidedly larger, and general coloration of male lighter (dark cadet blue), the frontal, superciliary, and malar regions much paler (forget-me-not blue).

Range.—Northern Argentina to east-central Bolivia (except the Guanacos region in the Province of Cordillera).

Remarks.—This form is readily separable from true *cyanea* by its much larger size, the wing of the male ranging from 83 to 89 mm., and the tail from 74 to 81 mm., while the color in the same sex is a lighter blue. Females vary somewhat in depth of color below.

According to Dr. Alexander Wetmore this is the form which is found in the Chaco of Argentina, also in Formosa. Its range thus appears to be separated from that of typical *cyanea* by the Paraguay River. It would be well, however, to compare a good series from northeastern Argentina with the form next to be subscribed.

Cyanocompsa cyanea poliogastris, subsp. nov.

Type, No. 32,948, Collection Carnegie Museum, adult male; Guanacos, Province Cordillera, Bolivia, August 21, 1909; José Steinbach.

Subspecific characters.—Similar to *Cyanocompsa cyanea argentina*, but posterior under parts of male more or less mottled with white. Wing (type), 87; tail, 79; bill, 15.5; tarsus, 20.5.

Range.—Known only from the Guanacos region in the Province of Cordillera, Bolivia.

Remarks.—Five adult males from this region agree in having the posterior under parts more or less mottled with white tips to the feathers, becoming almost "solid" in the middle of the abdomen in the specimen selected as type. None of the other examples of *argentina* which have been examined in this connection show any sign of this character, so that it cannot be seasonal. The single young male is rather paler than the same stage of *argentina*, but no females are yet available. *Cyanocompsa cyanea poliogastris* is evidently a local race of rather restricted range, comparable to certain others already described from this region—unless, indeed, it should turn out that this is merely the western edge of a much more extensive faunal area invading Bolivia from the east.

Cyanocompsa cyanea cyanea (Linnæus).

Loxia cyanea LINNÆUS, Syst. Nat., ed. 10, 1758, 174 (ex Edwards) ("Angola" = East Brazil, fide Hellmayr = Bahia).

Fringilla brissonii LICHTENSTEIN, Verz. Doubl., 1823, 22.

Cyanocompsa sterea OBERHOLSER, Proc. Biol. Soc. Washington, XIV, 1901, 188 (Sapucay, Paraguay).

Description.—Male: above and below dusky blue, the feathers with blackish bases, the forehead, superciliaries, and rump slightly brighter (deep dull violaceous blue), the lesser wing-coverts markedly brighter (grayish violaceous blue); wings and tail black with slight dusky bluish edgings, broader and very conspicuous on the middle and greater coverts and inner secondaries; lores and feathers at the base of the bill all around black; "iris brown; bill and feet black." Female: above Brussels brown, duller on the pileum, brighter on the rump; wings and tail dusky brownish with pale brown edgings; under parts between ochraceous tawny and buckthorn brown. Immature males resemble the adult female, but are usually darker brown, with indications of blue about the head.

Measurements.—Male: wing, 75.5; tail, 68; bill, 15; tarsus, 20. Female: wing, 72; tail, 64; bill, 15; tarsus, 19.5.

Range.—Eastern Brazil, from Pernamebuco to Rio Grand do Sul, and west to Goyaz and Paraguay.

Remarks.—The *Loxia cyanea* of Linnæus was based primarily on Edwards' "Blue Grosbeak from Angola," which must have come, not from Angola, but from the eastern coast of Brazil, as pointed out by Dr. Hellmayr (Novitates Zoologicæ, XV, 1908, 32). We therefore select Bahia as the type-locality, and the above de-

scription is based on a small series of fresh specimens from that place, collected by Mr. Rollo H. Beck.

In 1901 Dr. Oberholser described a bird of this group from Sapucay, Paraguay, carefully distinguishing it from *C. cyanea*. He had no adult male, but only a young male and a female example, which are now before us. We fail to separate them satisfactorily from the Bahia series, the type being comparable with Mr. Beck's No. 5747. Mr. Chubb (Ibis, 1910, 631–2), with a series (including both sexes) from Sapucay before him, also finds that they are indistinguishable from true *cyanea*, so that it would seem as if Dr. Oberholser had been misled into describing his bird as new by reason of its rather darker coloration, which is not unusual in young birds.

Cyanocompsa cyanea minor Cabanis.

Cyanocompsa minor CABANIS, Journ. f. Orn., IX, 1861, 4 (Caracas, Venezuela).

Cyanocompsa cyanea caucæ CHAPMAN, Bull. Am. Mus. Nat. Hist., XXXI, 1912, 163 (La Manuelita, near Palmira, Colombia).

Subspecific characters.—Similar to *Cyanocompsa cyanea cyanea*, but male with rump brighter blue (cadet blue), and under parts slightly darker blue. Female averaging slightly paler brown above. Male: wing, 74; tail, 65; bill, 14.5; tarsus, 19.5.

Range.—North-central Venezuela, reappearing in western Colombia.

Remarks.—Cabanis' original description of this form—"simillima cyaneæ, sed omnino minor"—is barely sufficient to save the name from the *nomen nudum* class, but it evidently pertains to this form rather than to *C. cyanoides*, and is so accepted by Dr. Hellmayr (Archiv für Naturgeschichte, LXXVIII, 1912, 68), who has probably seen the type. It may be doubted, however, if Cabanis had a specimen of *cyanea* before him when he wrote this diagnosis, for *minor* is certainly *not* smaller than *cyanea*. In fact, it is so very close to that form that we can find only one character of value by which to distinguish it—the brighter blue color of the rump. In view of this close relationship the gap existing between its range and that of *cyanea* is remarkable. Not only so, but the range of *minor* itself is discontinuous, apparently at least. It is found along the coast of Venezuela from Cumaná west to Caracas and the Sierra de Carabobo, and again in the Cauca Valley of western Colombia, but not (so far as we know) in the intervening

region. Dr. Chapman has described the Colombian bird as a distinct race, but with a good series of specimens from both regions for comparison we are unable to tell them apart. The only differences are those which are fully accounted for by wear.

Cyanocompsa parellina parellina (Bonaparte).

[*Cyanoloxia*] *parellina* BONAPARTE, Consp. Avium, I, 1850, 502 (Alvarado, Vera Cruz, Mexico).

Description.—Male: general color urania blue to indulin blue, the rump and pileum light violet blue, the forehead paler, inclining to mazarine blue; chin and sides of head blackish, with a patch of light violet blue on the malar region; rest of under parts blue like the back; wings and tail black with narrow blue edgings, wider on the upper coverts; lesser wing-coverts mazarine blue; "maxilla blackish or dusky horn color; mandible grayish horn color; iris brown; legs and feet brownish black or dusky horn color" (Ridgway). Female: above Brussels brown to Dresden brown; below similar, paler posteriorly (near clay color or cinnamon buff).

Measurements.—Male: wing, 70; tail, 54; bill, 12; tarsus, 18. Female: wing, 65; tail, 51; bill, 12; tarsus, 17.5.

Range.—Tropical Zone of eastern Mexico, from Yucatan to Vera Cruz, south to central Nicaragua.

Remarks.—This bird was formally described by Bonaparte from specimens in the Berlin Museum which had been brought from Mexico by Deppe, and which had in the meantime received a manuscript name of Lichtenstein's. It was made the type of a new genus, *Cyanocompsa*, by Cabanis in 1861, but all other authors referred it to the groups now known as *Guiraca* and *Passerina*, down to as late even as 1896. It is in fact related to *Passerina versicolor*, both in form and pattern of coloration, but on the whole it seems better to associate it with "*Coccoborus*" *cyanoides* and "*Loxia*" *cyanea* to constitute a single genus. This, the typical race, is an inhabitant of the hot region of Vera Cruz, not going above 800 meters, extending thence eastward to Yucatan and the islands off the coast and southward at least to Matagalpa, Nicaragua. Specimens from these extremes are fully as richly colored as those from Vera Cruz, so far as we can see. Nothing is on record concerning its habits.

Cyanocompsa parellina beneplacita (Bangs).

Cyanocompsa parellina beneplacita BANGS, Proc. Biol. Soc. Washington, XXVIII, 1915, 126 (Santa Leonor, Tamaulipas, Mexico).

Subspecific characters.—Similar to *Cyanocompsa parellina parellina*, but male slightly duller blue; female obviously paler, duller, less rufescent brown; and bill averaging smaller and blacker.

Range.—States of Tamaulipas and Nuevo Leon, northeastern Mexico.

Remarks.—With the ample series brought together for use in this connection we are able to confirm the characters claimed for this race by its describer. While not a strongly marked form, it is true, it may be told in series by its usually blacker and smaller bill (exposed culmen about 11 mm., and depth of bill at base 7.5 mm., as against 12 mm. and 9.5 mm. in the typical race), and the paler, duller coloration of the female, which latter is its best character. This is evidently not seasonal, since the series examined are comparable in this respect. Birds from Alta Mira, in the southern part of Tamaulipas, are not typical, and are referred here mainly on the ground of the color of the females, but specimens from Nuevo Leon are easily separable from Vera Cruz skins by their smaller bills. There is no difference in general size.

Cyanocompsa parellina indigotica (Ridgway).

P[asserina] parellina indigotica RIDGWAY, Man. N. Am. Birds, 1887, 447 (Manzanillo Bay, Colima, Mexico).

P[asserina] sumichrasti RIDGWAY, Man. N. Am. Birds, 1887, 447 (Tehuantepec City, Mexico).

Subspecific characters.—Similar to *Cyanocompsa parellina parellina*, but averaging slightly larger, and male lighter blue, the back and upper parts dusky blue, becoming forget-me-not blue on the forehead, malar region, lesser wing-coverts, and rump; female lighter brown. Male: wing, 73.5; tail, 60.5; bill, 13; tarsus, 18.3. Female: wing, 69.5; tail, 57.5; bill, 13.5; tarsus, 17.8.

Range.—Pacific coast region of Mexico, from Oaxaca north to Mazatlan.

Remarks.—A well-marked form, readily distinguished from the typical race by the characters above indicated. It is restricted to the Pacific slope of Mexico, and probably meets the range of *parellina* at the Isthmus of Tehuantepec. The *C. p. sumichrasti* of Ridgway, based originally on a young male example from this region, we refer here with but little hesitation, since an adult male in fresh plumage from Pluma, Oaxaca (No. 144,198, Collection

U. S. National Museum), although described by Mr. Ridgway as "identical in coloration with *C. p. parellina*," we find upon examination is not to be told from specimens of *indigotica* from farther north as regards coloration, and is closely approached by some of them in size.

Carnegie Museum, Pittsburgh, Pa.

FIELD STUDIES OF THE ANATIDAE OF THE ATLANTIC COAST.

BY LUDLOW GRISCOM *

SUBFAMILY FULIGULINAE.

THIS subfamily is at first very puzzling to the student because, for the group as a whole, there are hardly any generalizations without exceptions. The build, however, is much more stocky than in the *Anatinae*. The head is frequently rounded, and always stouter than in Mergansers. The neck is short except in the Canvasback, Old Squaw, Eiders, and Scoters, and then it is much thicker than in other ducks. The wing is very broad at the base, narrowing much more rapidly to a point than in *Anatinae*. In the Ruddy Duck this is carried to an extreme, so that the wing appears almost round in flight. The wing beats are much more rapid than in *Anatinae*, the wing arcs shorter. The flocking habits are also subject to variation. The members of the genus *Marila* fly either in dense clouds or else strung out in lines at right angles to the direction of flight. The Eiders and Scoters flock like Mergansers, as does also the Old Squaw. The other species rarely gather in flocks of any size and then exhibit no peculiar formation. With the exception of the Golden-eye and possibly *Marila*. the species of this subfamily rise from the water less steeply than the *Anatinae*, and alight more awkwardly. As a rule *Marila*, the Golden-eye and Bufflehead fly high; the Old Squaw, Eiders, Scoters and Ruddy Duck just above the water. There is, generally, a difference in the bill of the *Anatinae* and

* Concluded from Vol. XXXIX, p. 530.

Fuligulinae when they are not too far away. It is usually shorter in the latter, much less expanded at the tip and deeper at the base.

Although there are many minor differences in this group, as already pointed out, nearly all the species have two or more of the characters given above, so that they can be recognized at long distances. These ducks are the most abundant in the Eastern United States, nearly all preferring the ocean or large bodies of water and rarely occurring in other places. All dive for their food, which the *Anatinae* rarely or never do.

16. **Marila americana**—REDHEAD.

At close range on the water the male of this species is easily recognized by the brick-red head and upper neck. At any distance it is easily separable from the Canvasback by the profile of the bill and forehead which rises gradually from the nostril to the crown of the head in the latter, but shows an abrupt rise at the feather line in the Redhead. This applies to both sexes. The female appears very much like a female Scaup, but lacks the white around the bill, is generally paler, and has no conspicuous white stripe in the wing.

In flight the absence of white in the wing is conspicuous at close range, and is discernible in good light a half mile away. At a great distance Redheads mixed with Scaups can be picked out by their slightly larger size and more slender build. When such a flock is flushed the Redheads usually mount high, the top stratum of birds almost always being this species. Under these circumstances the Canvasback appears much larger, and in good light the white back gleams like snow, visible at times for two miles. The peculiar profile of the Canvasback is also discernible at a surprisingly great distance.

The female Redhead, when feeding and feeling quite serene is loquacious. She quacks like a half choked Black Duck according to Eaton, but to me it sounds like a growl, and might be represented by the syllables r-r-r-r-whá, r-r-r-r-whá, given rather deliberately in pairs. It is easily imitated. The male is usually silent.

17. **Marila valisineria**—CANVASBACK.

Means of distinguishing this species from the Redhead and the Scaups have already been briefly discussed under the Redhead. The profile of the bill and head give it, at a distance, the effect of having the wings placed far aft, which can be used to distinguish it from the other members of the genus two miles away. The larger size is also apparent when the three species are together. At great distances, in fact, the Canvasback looks more like a Merganser than anything else, but differs in the stouter body and the position of the body in flight already described under the Mergansers.

The characters mentioned apply equally well to both sexes. The student, however, should not attempt to distinguish these birds at a great distance, and should use only the profile of the head and bill as a means of identification unless thoroughly familiar with all three species.

18. **Marila marila**—SCAUP DUCK.

19. **M. affinis**—LESSER SCAUP DUCK.

Enough has been said already to distinguish these species from the Redhead and Canvasback. Any student with the proper knowledge beforehand should be able to identify a Scaup at a moderate distance and with a little practice at two miles.

The two species are so much alike that I consider them inseparable except under such favorable occasions as rarely occur. The male Lesser Scaup differs from its relative in being about an inch and a half smaller, in having the flanks more heavily barred, and the gloss of the head purplish instead of greenish. At a maximum distance of 100 feet the color of the gloss may be made out. Only four times in the last ten years, however, have I been near enough to be able to do so. I do not consider the barring on the flanks a field character, nor is comparison of size at close range of practicable value. The females I consider absolutely indistinguishable.

Many students believe that the Lesser Scaup is confined to creeks, ponds and streams, and that all Scaups seen in salt water or on the ocean are Greaters. This is by no means the case, however, and is typical amateur ornithology. Both species are apt to occur together in any kind of water, although the Greater occurs only accidentally on smaller bodies of fresh water. Enough has been said to show the difficulty in separating the two species. It is hard enough sometimes to identify skins.

20. **Marila collaris**—RING-NECKED DUCK.

This species is so rare in the northeastern States as to be considered almost accidental. In western New York, however, it is occasionally noted, and winters in the southern States in small numbers, while in the freshwater lakes of northern Florida it is the most abundant duck. It is essentially a fresh water species, and is to be looked for associated with Lesser Scaups.

From its relative the male can be easily separated at a distance not greater than 150 yards by its smaller size, black back and black bill with a light blue band near the tip. The latter is an especially good field mark. The feathers on the back of the head are long and stand out, giving the bird a sub-crested appearance. This shows when no color can be made out at all, and furnishes a clue to the species.

To distinguish the female Ring-neck and Scaup is much more difficult. There is much less white around the base of the bill, and it is pure white on the chin only. The plate in Eaton's 'Birds of New York' is incorrect in this particular. The female Ring-neck also has a white eye-ring, and the sides of the head below the eye are a much paler brown than the top of

the head. The head of a female Scaup is uniformly colored. The bill of the female Ring-neck is colored as in the male.

The chestnut collar of the male is not a field mark, as I have been able to detect it only once during the course of these studies. The white in a Scaup's wing is replaced by bluish gray in the Ring-neck, but the difference is too slight when the bird is moving to be reliable. On account of its rarity in most sections this species should be identified with the greatest caution and only under most favorable circumstances.

21. **Clangula clangula americana**—GOLDEN-EYE; WHISTLER.

The large, round, white spot in front of the eye of the male Whistler, as this species is popularly called, serves to distinguish it from any other member of this subfamily when sitting on the water. Both sexes may also be known by the puffy head, with an almost circular outline, caused by the elongation of the feathers of the occiput.

In flight the puffy head gives the bird an extremely short-necked appearance which is very noticeable. The wing-beats are extremely rapid. The male has a large amount of white in the wing, and the female, which has much less, may also be known from a Scaup in that the white is in the form of a patch or mirror and not a long stripe. Both sexes are famous for the musical whistling of their wings, which has a humming resonant quality and is audible at a very great distance. It can often be heard when the birds are practically invisible to the naked eye. This species rises from the water as rapidly and as steeply as a Black Duck.

The foregoing characters distinguish this species at great distances.

22. **Clangula islandica**—BARROW'S GOLDEN-EYE.

The drake can be easily distinguished from the last at close range by the different shape of the white spot on the face and its relative position with regard to the eye. The females and young are absolutely indistinguishable.

This species is so rare even in the northeastern States that it should be identified with the greatest caution. A sight record would be of little value unless made by a trained field ornithologist.

23. **Charitonetta albeola**—BUFFLEHEAD.

As this handsome little duck floats gracefully over the water, it may be recognized at once by its puffy head and large, triangular shaped, white patch on the occiput, and also by its striking black and white coloration. In this respect, as well as in size, it resembles the male Hooded Merganser, but differs, of course, decidedly in the build and the proportions of the body. The female is an insignificant duck. She may be told by her small size, puffy head, white spot on the side of the head and the white in the secondaries.

At long range in flight the Bufflehead looks like a diminutive Scaup or Golden-eye. The wing beats are much more rapid than in a Scaup and the neck is not short as in a Golden-eye. These three characters serve

to distinguish it from its relatives. From a Hooded Merganser or Teal it can always be told by its shape and wing-arcs which are similar to those of other sea ducks.

24. **Harelda hyemalis**—OLD SQUAW.

The Old Squaw, thanks to several peculiarities, can be distinguished as far as the eye can detect it. On the water at reasonable distances the male in winter plumage is mostly white with black on the side of the head, breast, stripe down the middle of the back, and wings. The tail feathers are greatly elongated. In summer plumage the head, neck and breast are black with the sides of the head pure white. The peculiar pattern of coloration is very striking and can be accredited to no other species. The female is equally striking, with a large amount of white combined with no white in the wing. No other duck has so much white with a black wing.

It is, however, when the birds are on the wing that they are most easily identified. Close by, the absence of white in the wing and the striped black and white back of the male are good color characters. The Old Squaw's body is stocky just as in other members of its subfamily but the neck is long and thin with the head of the normal type. This combination gives the bird a unique shape. The flight is also peculiar but difficult of description. The wings are held more curved than in other species and this, at a distance, produces the following effect:—the wing tips instead of moving up and down at right angles to the body seem to be directed backwards towards the tail during the downstroke. The wing arc would consequently be twisted. Secondly the wing is brought less above the body, during the upstroke and much lower during the downstroke than in any other sea duck. Thirdly the bird has a trick of kealing over a little to one side—usually that nearest the shore. This might be explained by saying that a line connecting the two wings at the shoulder joints would not be parallel to the water's surface.

The Old Squaw is highly gregarious. A few birds fly in Indian file, but a greater number group themselves in various ways. In the spring after March 15 the birds are nearly all paired and the male almost invariably flies behind the female. This rule holds good for pairs at other seasons. They love to gather on the water in "rafts" and at such times are very noisy, a musical chattering "honk-a-link, honk-a-link," reaching the listener at times over a mile of silent water. As a rule this species flies low over the water but is much given to erratic changes of course, turning almost as rapidly as a Teal. The males, especially in the spring, are fond of dashing straight up in the air and descending with equal swiftness. The Sea Ducks all alight in the water with a splash, but this species is particularly awkward, flopping in most ungracefully, its momentum at times carrying it for some 25 feet over the water. As a result it has a habit of flying beyond its intended alighting place and then turning sharply, thus reducing its speed.

25. **Histrionicus histrionicus**—HARLEQUIN DUCK.

The drake at close range cannot be mistaken for a single other species for a moment. At a distance it is a dark bird with white patches, stripes or spots in various places. The stripe on the side of the body just forward of the wing is the last one to become invisible, and is sufficient to identify it. On the water the tail is cocked up in the air.

The female is an obscure little duck, and its rarity in the North-east makes the greatest care and caution necessary in identifying it. It is usually compared to a female Bufflehead, and distinguished by having two light spots on the side of the head instead of one. As a matter of fact it is a larger and a much darker bird, the shade of brown suggesting a female Scoter or young Old Squaw, and it is the latter bird which is most apt to be called a Harlequin by the over-enthusiastic. At a distance the detail of the two light spots becomes dim, and both birds give the effect of light color on the side of the head, and the difference becomes one of degree only, not at all satisfactory when so rare a bird is involved. I once watched a lone bird off a rocky coast for over half an hour without definitely settling its identity until it began to dive, giving brief glimpses of the light belly of an Old Squaw.

26. **Somateria dresseri**—EIDER

27. **Somateria spectabilis**—KING EIDER.

The distribution of the two Eiders in the North-eastern States is peculiar. The American Eider, while steadily decreasing in numbers, is still not uncommon in winter as far south as Cape Cod and Martha's Vineyard, but south of these points it is a very rare bird, and there are only four records for Long Island. The King Eider on the other hand is a rare bird in New England, but visits eastern Long Island regularly in winter, and is occasionally common.

Eiders in life have the same flight habits and general shape and appearance as large Scoters. The adult males, as usual, are unmistakable. No other Sea Ducks, except the Old Squaw, have more white above than below. Adult females look again like large Scoters, but are a much warmer shade of brown. Immature birds lose this color effect, but the barring, streaking, and vermiculation over the whole body produces an effect which is more easily noticed than described, and is discernible at a surprising distance. As a matter of fact size alone would eliminate all but the white-winged Scoter, the white wing patch of which is visible at a great distance. At a great distance, also, young Eiders look brown, Scoters black.

Separating the two Eiders, however, is a different proposition. The males are easily distinguishable by several characters, but the best one, which applies at any season and at the maximum distance is the wing. In the King Eider the wing is black with a white patch. In the American Eider the fore-part of the wing is white, the terminal half black.

It is possible under favorable circumstances to distinguish the *adult*

female King Eider. The bird has a decidedly rusty or buffy brown rather than a sooty brown appearance. The unstreaked throat makes this part appear lighter than the top of the head, giving a contrasted effect which the American Eider does not have. The feathers of the lesser wing-coverts and scapulars are buffy or rusty brown with broad black centers, giving a contrasted coarsely mottled effect, which is noticeable at a considerable distance. This is very different from the uniform sooty-brown wing of the American Eider, as the dull buffy tips to the feathers are invisible a few feet away.

A word or two of caution here to students. While it is possible to distinguish the adult female King Eider by the characters given above it does not follow that a bird not exhibiting these characters is an American Eider. Far from it. The majority of females and immatures are absolutely indistinguishable in life, unless accompanied by adult males. A single bird, therefore, unless it can be definitely proved to be an adult female King Eider, is unidentifiable.

The Greenland Eider is, of course, absolutely indistinguishable in life from the American Eider. It is of accidental occurrence in the territory covered by this paper.

28. **Oidemia americana**—AMERICAN SCOTER.

29. **O. deglandi**—WHITE-WINGED SCOTERS.

30. **O. perspicillata**—SURF SCOTER.

The Scoters in general build resemble Mergansers more than any other ducks. They are, however, much stockier, the heads and necks are stouter, and they do not hold themselves the same way in flight. The general color is a dull black in the males and various shades of brown in the females, which becomes black at any distance. At a distance of half a mile or more Scoters might resemble Canvasbacks, if the latter showed no white. They could then be told by their flight formation which resembles that of Mergansers, and by the fact that the wings are not brought high above the body at the up-stroke. The Black Duck is similarly colored at a distance, but the entire difference in shape and flight should prevent confusion.

The three species of Scoter are so much alike in the field that separating them is frequently impracticable. The White-winged Scoter, as its name implies, has a conspicuous white wing patch, which is visible a quarter of a mile or more in good light. No other duck is wholly black with a white wing patch. When sitting on the water with its relatives, however, unless very close, this patch does not show. The other two species of Scoter are inseparable on the wing except at very close range. The American is, however, slightly smaller, and a small female with other Scoters is easily picked out.

At very close range the male Surf Scoter may be identified by the two patches of white on the top of the head, and the brilliant red, yellow and white bill. The American Scoter is wholly black, and the bill is black and

yellow. The White-winged Scoter shows a little white in the wing, as a narrow line, has white around the eye, and a bill which appears mostly red.

The females are much more difficult to separate. The American Scoter has the whole side of the head grayish and is decidedly paler below than the others, at times appearing almost white. The other two have two light spots on the side of the head. Unless the white in the wing of the White-winged Scoter can be made out it is indistinguishable from the Surf. The bills of all these species in this sex are dark colored. Conditions, therefore, must be unusually favorable, or else the identification of females and immature birds is practically impossible, because the light and dark areas are not sharply contrasted as in the males.

31. **Erismatura jamaicensis**—RUDDY DUCK.

The little Ruddy Duck exhibits so many peculiarities that by European systematists it is put in a subfamily of its own. Classing it, however, as a Sea Duck, the characters of the subfamily reach their greatest exaggeration in this species. No duck is so dumpy in build. The short, spiny tail gives it a very truncated appearance. The neck is, in proportion to the bird's size, entirely normal, accentuating the peculiarity of the body. The wings are very short and rounded. The wing beats are very rapid. The bird seems to find it a great exertion to fly, doing so only as a last necessity, and craning its neck as far forward as possible, it paddles away for dear life, looking like nothing so much as a gigantic bumblebee. Its speed, however, is by no means contemptible.

On the water, of course, many of these peculiarities are lost. At close range the bird is, generally speaking, brown above and grayish below, the sides of the head pure white in males, and dull but pale in females. In males the top of the head is black, affording an excellent contrast, which can be seen a quarter of a mile or more in good light. The head is usually curved backwards a little, and the short tail-feathers are cocked straight up in the air, somewhat after the fashion of a Wren. The male in full plumage is rarely seen.

There is no excuse for confusing the Ruddy Duck with any other species.

SUBFAMILY ANSERINAE

Geese can at once be distinguished from Ducks by their long necks, which are one third of the bird's length in flight; their large, stout bodies, forming a marked contrast with the long, slender neck; the very broad wings with relatively slow, measured wing-strokes. Their notes are loud and always given in flight; the term "honking" is usually applied to it.

Three species occur in the Eastern United States. The Canada Goose occurs everywhere, but alights in comparatively few places.

The Brant is strictly maritime. The Snow Goose winters regularly on the coast of North Carolina reaching its quarters by a cross country flight from north-central Canada. To all parts of the northeastern States it is little more than an accidental migrant. The Blue Goose and White-fronted Goose are rare or accidental east of the Mississippi Valley. All the species are so readily distinguishable in life that a key seems superfluous.

32. **Chen hyperboreus**—SNOW GOOSE.

The adult Snow Goose, pure white with black-tipped wings, is readily identifiable as far as the eye can see it by anyone who knows enough to tell a Goose from a Pelican or Crane. The young bird is pale grey, and looks paler with increasing distance.

The two subspecies cannot of course be separated in life.

Snow Geese do not fly in the wedge-shaped formation of Canada Geese. They are noisy birds, cackling rather than honking.

33. **Chen caerulescens**—BLUE GOOSE.

The adult Blue Goose is readily identifiable, even at a considerable distance, in being a dark-bodied bird with a white head and neck. This is the opinion of others, as I do not know the bird in life. I should not think that the young could be definitely distinguished in life from young White-fronted Geese except under very exceptional circumstances.

34. **Anser albifrons gambeli**—WHITE-FRONTED GOOSE.

This species at a distance has a generally grey appearance with a white belly and rump. The white forehead and black on the belly of the adult are visible only at close range. The young bird is much darker than the young Snow Goose. At a very great distance when color details are entirely lost, it might be confused with the Canada Goose. The notes, however, are quite different. Moreover this species and all the others discussed so far have a more rapid wing-beat than the Canada Goose.

This species and the Blue Goose are so rare in the Atlantic States that sight records would be of little value.

35. **Branta canadensis**—CANADA GOOSE.

36. **B. bernicla glaucogastra**—BRANT.

The wary Canada Goose, thanks to an inborn bump of suspicion, is still a common bird in the eastern United States wintering in great numbers from North Carolina southward. Throughout the northern half of the country it is a common migrant, alighting, however, only along the coast and large bodies of water inland where there are good feeding grounds. Inland it is the only species that will be met with, the Brant being purely accidental away from the immediate vicinity of the ocean.

Along the coast the two species are likely to occur together. Contrary to a general opinion they can easily be separated at any distance. When not in flight or at close range there are several excellent field marks, but size should not be used. The Brant lacks the white patch across the throat and sides of the head and has a black breast, all of which give it a very dark appearance forward. Both species have white upper tail coverts, but the Brant has most of the rump white as well. When Geese are flushed they nearly always fly directly away from the observer. The rump and tail-coverts are thus exposed, and the great amount of white in the Brant is noticeable.

There are a few other points of difference between these two geese. The Brant's honk is less clear, hoarser, and more rapidly repeated. The flocking formation is also different. The Canada Goose does not always fly in a wedge-shaped flock, as is sometimes popularly believed, but they do always fly in some definite arrangement of lines. A large flock of Brant, however, fly in a shapeless mass with a few birds stringing out behind and along the sides, more like *Anatinae* than anything else. While feeding Canada Geese are stately and leisurely in their deportment. The Brant in some respects reminds one of a Sandpiper. It changes its course suddenly, takes sudden quick steps forward at times, and darts its head and neck from side to side in a great semicircle.

SUBFAMILY CYGNINAE

37. **Olor columbianus**—WHISTLING SWAN.

But one native species of Swan occurs in the eastern States. It is very abundant in the Currituck Sound region of North Carolina in winter but is elsewhere a very rare migrant, except in Western New York, where Eaton considers it as a regular visitor. An adult Swan is snow white in plumage with a black bill and feet which are very conspicuous. In flight it has a wing-spread of seven to eight feet and is a magnificent bird. It is exceedingly conspicuous, being easily identifiable at a distance of three and a half miles even when sitting on the water, a statement actually tested. On the wing at a distance of a mile or more in poor light, or when the bird is at a great height, the white color is not evident. The great length of the neck is then diagnostic, as it appears to be one half of the bird's total length. The great size is also noticeable, as it appears as much bigger than a Goose as that bird is bigger than a Duck. Oddly enough, however, the wing-beats are scarcely slower than those of a Goose.

When feeding Swans are extremely noisy. The note is a "toot, toot," exactly like the noise made by a tin horn increased many times. At night it is audible for a mile or more over the silent water. When alarmed or otherwise excited, the Swan stretches its neck in the air as high as possible, and "toots" with great rapidity and even more noisily. Under such circumstances a large flock makes a terrific din, drowning the detonations

of a motor-boat engine. Finally they decide to move off, and rise from the water with comparative ease. With no apparent effort or haste they manage to attain an enormous height and are way down the bay in a few seconds.

Swans are protected by law in Currituck Sound, but this is not such a safeguard to the bird as its toughness, for the flesh of an adult would defy old Father William himself. Some pot-hunters, however, claim that young birds when boiled long enough are very good eating. They differ from adults in being ashy gray with a brownish mark on the head and upper neck. At any great distance they are practically indistinguishable from their parents.

There is a prevalent idea that a large Swan is to be considered a Trumpeter. This species is western and is now among the rarest of North American birds. It has not occurred in the eastern states for 50 years at least, and cannot be distinguished by its size unless carefully measured.

A European species, the Mute Swan, has become feral in parts of New York and New Jersey. The adult can be distinguished from the adult Whistling Swan only by the bill, which has a prominent knob at the base, and the upper mandible is largely reddish orange, the entire bill being black in the other species. This difference can only be detected at close range, so that Swans must be identified with the greatest care in the north-eastern States. Young Mute Swans have lead-colored bills, young Whistling Swans reddish bills.

SUMMARY.

1. It is possible to place any member of the family in its proper subfamily at sight.

2. The following species or groups are identifiable at very great distances:—Swans, most Geese; Mergansers; Black Duck; Baldpate; Pintail; Teal; *Marila*; Canvasback; Whistler; Old-Squaw; Eiders; Scoters; Ruddy Duck. This statement assumes that the necessary favorable circumstances for observation exist. Distance is also a matter of common sense. It is obvious that a Ruddy Duck is not visible as far away as a Swan.

3. The following species are wholly or in part indistinguishable for all practical purposes in life:—Female and immature of the two Widgeons; female and immature European and Green-winged Teal; Lesser Scaup Duck; female and immature Barrow's Goldeneye; Greenland Eider; practically all plumages of female and immature Eiders; immature White-fronted and Blue Geese; Trumpeter Swan; all subspecies.

4. The following birds require exceptional skill or favorable circumstances to distinguish:—Female Gadwall; female Ring-necked Duck; female Harlequin Duck.

5. The following species can only be identified by color markings at close range:—Female and immature American and Red-breasted Mergansers; male European Widgeon; male European Teal; female Wood Duck; female Redhead; male Barrow's Golden-eye; adult female King Eider; female and immature Surf and American Scoters.

6. Sight records of European Teal, Blue Goose, and White-fronted Goose are best left unpublished along the Atlantic Coast. Sight records of the three females in section 4 that are of special difficulty to identify are of little value in sections where they are very rare, unless accompanied by males.

7. These remarks apply to trained observers only. Beginners had better divide the family into Swans, Geese, and Ducks, and then confine themselves to color markings within each group. The "fine points" discussed in this paper are *possibilities* for trained students of these birds with years of experience. No sight record of a rarity should be founded on these "fine points" alone for a moment by anybody, no matter how experienced. Nor should the beginner identify his first flock of Ducks by these "fine points." It is hoped, however, that they may be helpful and assist him in gaining an acquaintance with one of the most fascinating groups of birds.

American Museum Natural History, New York.

NOTES ON THE FORMS OF THE GENUS *OREORTYX* BAIRD.

BY HARRY C. OBERHOLSER.

A RECENT investigation into the status of the bird described as *Ortyx douglasii* by David Douglas led incidentally to the examination of the *Ortyx picta* of the same author. This latter specific name, as *Oreortyx picta*, has been used for the dark race of Mountain Quail, or Mountain Partridge, that inhabits a narrow strip along

the Pacific Coast of North America from northwestern Oregon to central California; while the name *Oreortyx picta plumifera* has been applied to the subspecies occupying the interior of California and the interior of western Oregon.

The Mountain Quail has an interesting history, nomenclaturally and otherwise. It was originally described as *Ortyx picta* by Douglas[1] in a report of the December 16, 1828, meeting of the Linnean Society, given in the 'Philosophical Magazine' for January, 1829, which number was published on or near the first of this month. This brief description, long overlooked, has priority over the later and more elaborate account that appeared in the 'Transactions of the Linnean Society of London' which certainly did not appear so early in the year 1829, but probably about March or April. As many American ornithologists have not access to the 'Philosophical Magazine,' the original description is here reproduced:

"*Ortyx picta.* Mas. Fusca subtus ferrugineo-flava nigro fasciata: gulâ rubro-purpureâ albo graciliter cinctâ: pectore vertice caudâque plumbeis: cristâ nigrâ longissimâ, lineari; lineis super cileare albis, caudâ tectricibus inferioribus ferrugineis.

Foem. Subcristata, gulâ pectoreque fusco-ferrugineis, fusco fasciatis.

Interior of New California."

The later description in the 'Transactions of the Linnean Society,' in so far as its Latin portion is concerned, is practically the same, but there is also an elaborate description in English and much on the habits and distribution from information obtained by Douglas from his own explorations. These two descriptions were composed by Douglas from his own notes, but no specimens were saved. The reason for this is evident from the following quotation. Speaking of the bird, Douglas says:

"Common in the interior of California, and during the summer months extending as far northward as 45° north latitude, that is, within a few miles of the Columbian valley. No specimen of this exceedingly interesting bird exists in any collection. Several pairs, male and female, as well as several of the following species, which I prepared with great care in the interior of California, in November 1826, I had the misfortune (too painful to dwell upon) to lose, with a multitude of treasures botanical and

[1] Philosophical Magazine, new series, V, No. 25, Jan. 1, 1829, p. 74; Trans. Linn. Soc. Lond., XVI, pt. 1, 1829, (before May) p. 143.

zoological, crossing one of the rapid tributary streams of the river *Multnomah* [= Willamette], near its source in the mountains, on my return northwards. On this occasion I lost the labour of fifty-four days of fatigue and anxiety, the too frequent attendants of such undertakings."[1]

These notes refer to Douglas' first journey to the northwestern part of America, during which he traveled from the Columbia River south to the headwaters of the Umpqua River, Oregon, but at no time was he within the present State of California. In his day all the region north to the Columbia River was called "California," which accounts for his using the expression "the interior of California" as the habitat for his Mountain Quail. As he tells us in the extract above reproduced, the specimens obtained by him were collected in November, 1826, at which time he was at the headwaters of the Umpqua River near the Calapooia Mountains. This may, therefore, be properly considered the type locality of *Ortyx picta* Douglas.

Mountain Quails of the interior, from Siskiyou in southern Oregon north to near the mouth of the Willamette River, belong to the light-colored interior race, not to the dark coast form, which is confined to the narrow, humid coast strip. Furthermore, the original description of *Ortyx picta*, in so far as determinable, indicates that the bird from which it was taken belonged to the same race, that is, the bird now called *Oreortyx picta plumifera*.

In view of these facts it is evident that the name *Ortyx picta* must be transferred to the interior race now known as *Oreortyx picta plumifera*.

The name *Ortyx plumifera* was proposed by Gould in his 'Icones Avium,' a rare work not often consultable by ornithologists, for which reason some of his remarks are possibly worth quoting here. He says:

"Having been always particularly interested with this New World group, it was with almost inexpressible pleasure that I hailed the arrival of this lovely species of Ortyx, three specimens of which formed a part of the ornithological collection of the late Mr. David Douglas, which collection was forwarded to England shortly after his lamentable death and was finally consigned to the Museum of the Zoological Society of London; and it is to the Council of that Society that I am indebted for permission to figure this species in the present way.

[1] Trans. Linn. Soc. Lond., XVI, pt. 1, 1829, (before May), p. 145.

"Had the gentleman who procured this valuable addition to our ornithological stores been permitted to return to his native land, we should doubtless have been put in possession of some details respecting its history, which deficiency I am unable to supply; and in all probability a considerable period will elapse before another equally intrepid traveller and enthusiastic naturalist will, solely for the love of science, risk his life in pursuit of the unknown treasures of the little-explored regions of California, of which this bird is a native."[1]

The plate and description of *Ortyx plumifera* apply without much doubt also to the interior race, as currently supposed. Gould tells us in a later publication[2] that the specimens on which the description of *Ortyx plumifera* was based were found in the baggage of Mr. David Douglas after his unfortunate death in the Hawaiian Islands, and were, therefore, doubtless collected in the interior of Oregon (whither Douglas returned after his sojourn at Monterey, California), as all of his Monterey collections were previously sent to England. Gould's use of "California" as the home of *Ortyx plumifera* refers, of course, to Oregon; and to make still more definite the application of the name *Ortyx plumifera*, it might be well to have an exact type locality; so for this reason we designate the lower part of the Willamette Valley, Oregon, since Douglas is known to have traveled in this general region during the journey that must have yielded the specimens from which *Ortyx plumifera* was described.

From the above details it is evident that the name *Ortyx picta* Douglas and *Ortyx plumifera* Gould both apply to the interior race now called *Oreortyx picta plumifera*. This necessitates of course the transfer of the name *Oreortyx picta* to the bird from the interior; and *Oreortyx picta plumifera* (Gould) becomes a synonym. Such action leaves the coast form currently known as *Oreortyx picta* without a name. In this connection it is of interest to mention that after the present writer had worked out the application of these names he discovered that Dr. T. S. Palmer, some years ago, while tracing the route of David Douglas, had reached the same conclusion, but had withheld publication in the hope of obtaining additional material from the type locality. In view of the fact that he now courteously declines to publish his findings, it

[1] Gould, Icones Avium, I, August, 1837, text to pl. IX, p. [1].
[2] Monograph Odontophorinae, I, 1844, text to pl. XV, p. [1]

seems appropriate to call the dark coast race of the Mountain Quail

Oreortyx picta palmeri, nom. nov.

Subspecific characters.—Similar to *Oreortyx picta picta*, but darker and more rufescent brownish (less extensively grayish) above, the hind neck usually of the same color as the back (not plumbeous); forehead and inner edges of tertials darker.

Type.—Adult male, No. 140847, United States National Museum, Biological Survey collection; Yaquina, Oregon, December 7, 1893; C. P. Streator.

A recent careful examination of a large series of specimens of this species from California and Lower California indicates that *Oreortyx picta confinis* is a recognizable race, differing from *Oreortyx picta picta* in still paler, more grayish (less rufescent), and less uniform coloration above; and that its range extends northward into California as far as the San Bernardino and San Gabriel Mountains. Specimens from southern California are, of course, more or less intermediate between *Oreortyx picta confinis* and *Oreortyx picta picta*, but as a whole average decidedly nearer the southern race.

The geographic ranges of the three recognized races of *Oreortyx picta* are as follows:

Oreortyx picta picta (Douglas).—Mountain regions of California, south to Ventura County and the southern end of the Sierra Nevada; east to the western edge of Nevada and the Cascade Mountains of Oregon; north to the Columbia River, Oregon, and on the coast of California to San Luis Obispo County; and west to the eastern coast ranges in western California and western Oregon.

Oreortyx picta palmeri Oberholser.—The narrow strip along the Pacific coast from Monterey County, California, north to northwestern Oregon; introduced into western Washington and Vancouver Island, British Columbia.

Oreortyx picta confinis Anthony.—Northern Lower California, south to the San Pedro Martir Mountains; and southwestern California, north to the San Bernardino Mountains and San Gabriel Mountains.

Biological Survey, U. S. Dept. Agriculture.

A BREEDING STATION OF THE HORNED LARK AND PIPIT ON THE GASPE PENINSULA.

BY CHARLES W. TOWNSEND.

Plate III.

THE last edition of the 'Check-List' gives the breeding range of the Horned Lark* (*Otocoris alpestris alpestris*) as follows: "Arctic zone of Canada from Boothia Peninsula south to head of James Bay and Newfoundland."

The most southern point at which this bird breeds in Labrador is on the coast about Natashquan. Here the character of the vegetation changes from Arctic to Hudsonian. In 1909, Mr. A. C. Bent and I took a pair at Natashquan that were apparently breeding. In 1912 and 1915 there were none at this place, but I found them breeding a little farther along the coast from Old Romaine northerly and easterly. Natashquan is about two hundred miles northeast of the region about to be described.

The Pipit (*Anthus rubescens*) breeds throughout the arctic zone in the north and south along the higher Rocky Mountains to New Mexico, but it has not been recorded as breeding south of southern Labrador and Newfoundland on the Atlantic coast. In Labrador I have not found it breeding south of Cape Whittle.

It has been known for some time, especially through the explorations of Professor M. L. Fernald, the botanist, and Professor A. P. Coleman, the geologist, that in the Shickshock Mountains, near the north coast of the Gaspé Peninsula, were extensive regions of table-land above tree limit presenting the arctic conditions of Labrador. No ornithological report of this region had, however, been obtained. It seemed to me worthwhile, therefore, to visit a part of this elevated region, and in July, 1922, I made the ascent of Mount Albert, 3640 feet, spent two days on the summit and found a breeding colony of Northern Horned Larks and of Pipits.

* It would be well if this bird were called the Northern Horned Lark to distinguish it from the other subspecies.

Geologically the Shickshock Mountains, the northern termination of the Appalachians, are the remains of a much higher range which, since Paleozoic times, have been worn down to the present core of granites, serpentines and resistent schists. Another interesting geological fact, which has profoundly influenced the life there, is that the Gaspé Peninsula during the last glacial period escaped the great Labrador ice sheet which passed on either side. Although there is evidence of glaciation in some of the valleys, much of the Peninsula and the tops of the mountains appear to have escaped, and must have supported life as islands in a great sea.

The summit of Mount Albert consists of a table-land some fifteen miles in extent, rising a little at the edges to plunge down in chasms and precipices. Protected by the northern rim of hard schists is a straggling forest of black spruce and fir, rising to a height of five or six feet, with tops blasted by the arctic gales, and, on its southern edge, a little lake imbeddded in the mossy and grassy tundra. Beyond are great plains of brown serpentine rock masses, riven and heaved about by the frost, and beyond are other plains that appear almost as green and as smooth as a lawn.

The flora is arctic in character, and comprises many species common to Labrador, such as curlew-berry, Labrador tea, pale-leaved laurel, moss campion and creeping birch and willows, as well as many plants, according to Professor Fernald, known only in widely separated serpentine regions, such as Newfoundland, northern Labrador, the Rocky Mountains and the Aleutian Islands, as well as a number of plants indigenous to these isolated mountains.

Of mammalian life the most prominent is the caribou. I found their tracks and discarded antlers everywhere, and saw a female caribou with her calf.

The views from this mountain top are everywhere of wilderness. To the north over forested peaks and lower land, is the Gulf of St. Lawrence, and, in the distance, could be seen the Laurentian Mountains, stretching along the north shore, past Godbout and Point des Monts and into the Labrador Peninsula at the Bay of Seven Islands, which is about eighty miles due north. The mountains back of the coast could be made out, perhaps as far east as the Moisie River.

SHICKSHOCK MOUNTAINS, GASPÉ PENINSULA, P. Q.
1. Across Devil's Gulsh to Tabletop.
2. Serpentine Plane on Mt. Albert.

To the east, separated by a chasm over 2,000 feet deep, made by the Ste. Anne River, is Tabletop, 4,350 feet, the highest of the Shickshocks, with its peaks and domes of reddish granite. To the west, beyond another chasm, stretch the Logan range of the Shickshocks, some as yet unexplored, and to the south is a great wilderness of forest and lesser mountains and gorges, through one of which the Cascopedia River cuts its way to debouch on the southern coast. On the eastern and southern side of the tableland is a great chasm, known as Devil's Gulch, of wild and primitive beauty.

I soon found the birds I had especially sought, and I secured two specimens of the Horned Lark, to make sure of its identity. It was breeding in considerable numbers, for, at a very moderate estimate, I concluded there were twenty pairs. I saw several full-fledged young, and the old birds flew about with insects in their bills, scolding me anxiously. Occasionally I heard the flight song and saw the bird high in the air. The Pipit was present in about the same numbers and showed similar evidence of breeding.

The great summit of Tabletop Mountain as well as the arctic summits of many of the other mountains must also contain breeding colonies, so this region of the Shickshocks, south of the Gulf of St. Lawrence, presents a large and favorable region for the breeding of these birds. It is interesting to speculate that these two species, after being driven out of their northern range by the advancing ice, may have retained detached breeding colonies in this Gaspé island during the last glacial period, and that they migrated south for the winters over a sea of ice.

Other birds seen on the summit were White-throated Sparrows, Juncos, Savannah Sparrows, White-winged Crossbills, Myrtle and Black-poll Warblers, Winter Wren, Gray-cheeked Thrush[1] and Robins, a Spruce Partridge[2] with a brood of young and a Red-tailed Hawk.

98 Pinckney St., Boston, Mass.

---

[1] The thrush was not collected, but a breeding bird taken at Percé was *alicise*

[2] Specimens taken later by R. M. Anderson proved to be *canace*.

A NEW SUBSPECIES OF THE LITTLE BLACK RAIL.

HENRY K. COALE.

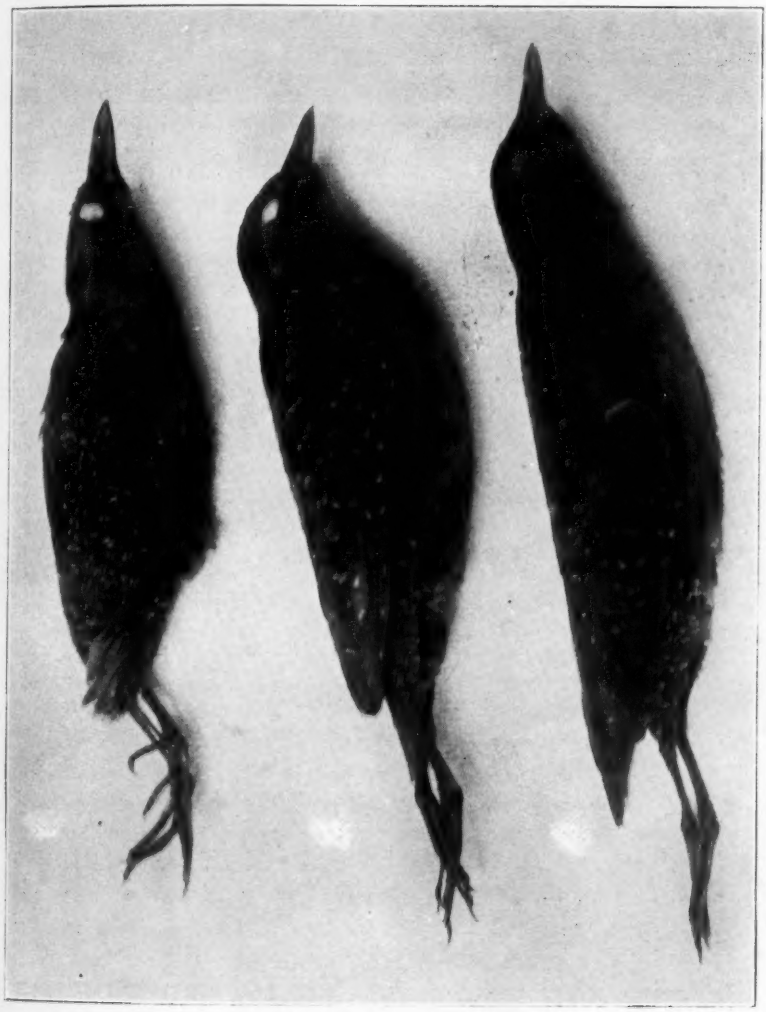
Plate IV.

SOME years ago I examined a Little Black Rail from Jamaica, preserved in the collection of the Academy of Natural Sciences of Philadelphia, which seemed to me then, to represent a form somewhat different from the bird of eastern North America. At that time I was familiar with the California Black Rail, but it was not until the summer of 1916 that I had the opportunity to examine a typical specimen of the eastern form taken by Mr. H. L. Stoddard, on the border of Hyde Lake, South Chicago, Illinois, on May 30, 1916.

Through the courtesy of Prof. S. C. Simms of the N. W. Harris Public School Extension of the Field Museum of Natural History, I was enabled to compare this example with specimens in the Philadelphia Academy of Sciences, the United States National Museum, the American Museum of Natural History, the Museum of Comparative Zoology, and the collection of Mr. John E. Thayer at Lancaster, Massachusetts, confirming my belief that the Black Rail of the eastern United States was different from true *Cresciscus jamaicensis* (Gmelin) of Jamaica.

Unfortunately there are available only three specimens of the Little Black Rail from Jamaica, none of them quite perfect, one each in the United States National Museum, the Academy of Natural Sciences of Philadelphia and the American Museum of Natural History. If we may judge of the accounts of the earlier Jamaican ornithologists, especially that of Gosse, the bird was formerly common, and was resident in Jamaica. It is certainly now very rare, possibly extinct, the mongoose undoubtedly having found it easy prey.

The Jamaican examples agree closely, and differ from the bird of Eastern North America, of which I have now examined many specimens, in having a longer and heavier bill and longer middle



LITTLE BLACK RAILS

On Left: *Creciscus jamaicensis jamaicensis*
Middle: *Creciscus jamaicensis stoddarti*
On Right: *Creciscus jamaicensis coturniculus*

toe and in being duller in general coloration with the white markings on the upper parts smaller.

It gives me pleasure to name the Little Black Rail of the eastern United States in honor of Mr. H. L. Stoddard whose indefatigable work in collecting and preparing the lifelike groups of birds which are distributed among the Chicago public schools by the N. W. Harris Extension of the Field Museum, has done much to make this worthy enterprise a success.

Cresciscus jamaicensis stoddardi, subsp. nov.

Type from Hyde Lake, Illinois, adult original No. 565 N.W. Harris Extension, May 30, 1916, H. L. Stoddard. Type now in the Field Museum collection.

Characters: Similar to *Cresciscus jamaicensis* (Gmelin) of Jamaica, but bill shorter and more slender, (exposed culmen 13–15 mm; in true *jamaicensis*, 16); middle toe shorter, (middle toe with claw, 25.5–28 mm.; in true *jamaicensis* 30); colors brighter, and white markings on upper parts larger. Similar also to *C. jamaicensis coturniculus* (Ridgway) of California, but larger, with much stouter bill.

Description of Type.—Head dark slate; throat slaty gray, darker on the breast; anterior portion of the back chestnut, merging into dark brown on the rump; primaries umber brown with white markings on both webs; secondaries with transverse white bars; wing-coverts olive-brown with black triangular marks followed by white margins; tail dark brown with two or three narrow white bars; back, rump and upper tail-coverts sprinkled with white; center of abdomen light slate; flanks and under tail-coverts dark olive-brown, with faint white bars; legs and feet horn brown. Wing, 77 mm.; tail, 34 mm.; tarsus, 22 mm.; exposed culmen, 14 mm.; Middle toe with Claw, 27 mm. Iris brilliant red; feet black (orig. label).

Remarks.—Two important articles have been published dealing with the history and distribution of the Little Black Rail. One by J. A. Allen (Auk, Vol. 17, 1900, pp. 1–8, with a color plate by Fuertes). The other by Wm. Brewster (Auk, Vol. 24, 1907, pp. 205–210) in which the subspecies are critically discussed and tables of measurements given.

The range of the new form is, of course, the same as usually given for the eastern subspecies, except to exclude Jamaica; roughly speaking, eastern North America from Massachusetts to Florida, West to Illinois, Kansas, Texas and Arizona.

Since Brewster's article was published, there have been a few records for the Little Black Rail from various sources and in 1915

Arthur T. Wayne, in 'The Warbler' describes the nest and eggs taken by him near Mt. Pleasant, South Carolina, June 10, 1903, accompanied by a color plate of the eggs, and a photograph of the male, female, nest and eggs, then in the collection of the late John Lewis Childs.

The bird, however, still remains more sparingly represented in collections than perhaps any other existing species of eastern North America. Mr. John E. Thayer is thus very fortunate in possessing what is probably the largest series in any collection from any one place, having a dozen specimens all taken at Tuckerton, New Jersey, in 1914 and 1915. This series includes a downy young about two days old, and two half-grown young.

I am under special obligations to Mr. Outram Bangs who very kindly revised this manuscript for me and also for loan of specimens by the American Museum, United States National Museum, Philadelphia Academy and Mr. John E. Thayer.

Highland Park, Illinois.

DESCRIPTION OF A NEW CLAPPER RAIL FROM THE COLORADO RIVER VALLEY.

BY DONALD R. DICKEY.

FIELD work carried on during the spring of 1921 in the Colorado River Valley, Imperial County, California, by Laurence M. Huey and Mrs. May Canfield, in behalf of the author's collection, resulted in the utterly unexpected capture of three individuals of a distinct new species of Clapper Rail. This species is described below.

Rallus yumanensis sp. nov.

YUMA CLAPPER RAIL

Type.—Male adult; no. J 1039, Collection of Donald R. Dickey; Bard, Imperial County, California; altitude 140 feet; May 15, 1921; collected by Mrs. May Canfield; original no. 229.

Specific Characters.—Nearest in appearance to certain examples of *Rallus levipes*, but instantly separable from typical *levipes* by duller and more olivaceous outer superior wing-coverts and alula, by paler coloration of underparts and more slender tarsus and bill. Differs from *Rallus*

obsoletus of the San Francisco Bay region in smaller foot, shorter and much more slender tarsus and bill, and in brighter and more pinkish fore-neck and breast. Differs from *Rallus longirostris saturatus* of the Gulf coast in brighter and more pinkish underparts, in generally narrower white barring on sides and flanks, and more whitish abdomen; also in straighter, more slender, and much shorter bill, and in more slender tarsus.

Description of type.—Forehead and crown between buffy brown and olive-brown, the feathers with stiff, shiny, blackish brown shafts; occiput and upper cervix deep sepia; middle cervix similar but lighter, with paler edgings; lower cervix, back, and scapulars between olive-brown and clove brown on the broad central stripes of the feathers, with margins between drab and grayish olive; rump, upper tail-coverts, and tail olive-brown, with median shafting of a darker tone of the same color along the vanes of the feathers; primaries, primary coverts, and secondaries mummy brown; tertials like scapulars; exposed surface of greater wing-coverts Saccardo's umber; sides of head hair brown; lower eyelid dull white; supra-loral stripe buffy white; malar stripe light pinkish cinnamon, fading to nearly white anteriorly; sides of neck like middle portion of cervix, but suffused with light pinkish cinnamon; chin and throat white, merging into the color of malar stripe and jugulum without sharp line of demarcation; jugulum and breast avellaneous, tinged with cinnamon laterally, and paling to light avellaneous on middle of breast; abdomen dull creamy white; sides barred with white to a width of 1 mm. to 2 mm., with olive-brown interspaces 7 mm. to 8 mm. wide; flanks and crissum similar but lighter and more grayish, the outermost feathers of crissum being nearly all white on outer webs; tibiae drab posteriorly, dull creamy white anteriorly; lining of wing similar to flanks, but with even narrower and more wavy bars of dull white; bill (dry) ochraceous-orange, darkening to olive-brown terminally, and to bister along culmen; feet (dry) bister.

Range.—So far as known, the fresh water riparian strip along the Colorado River above Yuma, and adjacent irrigation canals in the vicinity of Laguna Dam. The dates of capture, together with a field notation by the collector (May 27, "Laying") definitely indicate summer residence in this region and association. The winter range is at present unknown.

Remarks.—Comparison has been made with fifty-six individuals of the three species which surround, in a geographic sense, the species proposed herewith. The depth of bill at nostril, depth of bill at base, length of exposed culmen, and tarsal diameter are considered by the describer critical mensural characters for this species. A definite hiatus in these four characters seems sufficient basis for precluding suspicion of any close genetic relationship with *obsoletus*, in spite of certain color analogies. The equally definite mensural hiatus between *yumanensis* and *saturatus* in depth of

MEASUREMENTS

MALES

	Specimens Examined	Wing			Tail			Tarsus			Tarsal Diam.[3]			Toe[4]			Culmen			Bill Depth at Base[5]			Bill Depth at Nostril.		
		Min.	Max.	Av.	Min.	Max.	Av.	Min.	Max.	Av.	Min.	Max.	Av.	Min.	Max.	Av.	Min.	Max.	Av.	Min.	Max.	Av.	Min.	Max.	Av.
R. yumanensis	1[1]	156.	156.	156.	71.0	71.0	71.0	51.5	51.5	51.5	5.8	5.8	5.8	46.0	46.0	46.0	58.0	58.0	58.0	12.5	12.5	12.5	8.1	8.1	8.1
R. obsoletus	8	153.	166.	161.	68.0	76.0	71.7	51.8	63.3	57.3	6.1	7.9	6.9	49.0	55.0	52.5	58.5	65.0	62.8	13.4	14.3	13.9	9.3	10.5	9.9
R. l. saturatus	7	147.	162.	153.	60.0	70.0	65.1	51.0	58.0	55.6	6.1	6.4	6.2	45.0	52.5	48.7	59.5	69.0	63.1	13.0	14.5	13.5	8.8	10.0	9.1
R. levipes	17	146.	162.	157.	61.0	70.5	65.9	46.0	57.5	53.9	5.6	7.5	6.7	44.5	53.0	49.7	54.0	61.5	58.6	13.0	16.0	14.5	8.1	11.0	9.7

FEMALES

R. yumanensis	2[2]	142.	146.	144.	62.0	63.0	62.5	50.0	50.0	50.0	5.1	5.5	5.3	44.0	45.0	44.5	[6]53.5	53.5	53.5	11.8	11.8	11.8	[6]7.4	7.4	7.4
R. obsoletus	9	146.	156.	151.	61.0	70.0	65.1	50.0	54.5	52.1	6.0	7.2	6.4	46.0	50.0	47.9	55.0	59.5	57.2	11.5	13.0	12.3	8.5	9 4	9.1
R. l. saturatus	3	139.	144.	141.	58.0	65.0	62.3	50.0	51.0	50.3	5.4	5.9	5.7	43.3	44.0	43.8	62.0	64.0	63.2	12.0	13.0	12.5	7.8	8.3	8.0
R. levipes	12	138.	154.	148.	57.0	68.5	61.8	45.5	52.0	49.3	5.5	6.4	6.0	43.0	47.0	45.5	50.0	56.0	53.1	11.5	13.5	12.8	7.9	9.0	8.5

[1] Type—Coll. D.R.D.
[2] Paratypes—Coll. D.R.D.
[3] Being the greatest or flat diameter taken at median point of tarsus.
[4] Middle toe, without claw.
[5] Distance from base of exposed culmen to nearest point on bottom line of bill.
[6] One bird used; bill of other paratype imperfect.

bill at nostril, depth of bill at base, and culmen length, together with the difference in shape of bill and the brighter breast coloration of *yumanensis* seem to set the latter off with equal specific certainty from the Gulf bird, at least on the basis of published data and available specimens.

Interesting problems are also suggested as a result of a careful comparison of *yumanensis* with *levipes*. The latter, in what may be considered its large, highly colored, typical form is at once separable from *yumanensis*. However, our own examination of twenty-nine specimens of *levipes* has disclosed two individuals (Nos. F 52 and F 53, Coll. D.R.D.) from National City, San Diego County, California, which superficially seem to bridge the gap between these species both in measurements and in general coloration. However, the outer superior wing-coverts and alula, even in these unusual specimens, are distinctly brighter than the same areas in the three specimens of *yumanensis* examined. Despite this difference, these two specimens of *levipes* might still suggest the idea of specific identity between *levipes* and *yumanensis* to some ornithological workers. The writer is perhaps unduly hesitant in making inferences of this sort. It is his firm conviction that there would be grave danger in implying close genetic relationship and specific identity from this general indication of physical similarity, cropping up as it does in such a small minority of individuals. He therefore proposes the specific binomial concept for a bird that will in all probability prove to be geographically isolated; that exhibits a definite hiatus in several important physical characters; and that occupies a unique ecologic niche. In the latter connection it is interesting to note that we here have a true Clapper Rail inhabiting for the first recorded instance a purely fresh water environment.[1]

Acknowledgments.—To Dr. H. C. Oberholser, of the Bureau of Biological Survey, to Dr. J. Grinnell and Mr. H. S. Swarth, of the Museum of Vertebrate Zoology, and to Mr. L. E. Wyman, of the Los Angeles Museum of History, Science and Art, for the courteous loan of specimens under their care, and to Mr. A. J. van Rossem, for a painstaking check of measurement tables, my profound

[1] Mr. H. S. Swarth calls my attention to an earlier specimen listed from Yuma, Ariz., and probably of this species (Pacif. Coast Avifauna, 10, p. 17).

thanks are due. In addition, a further word of appreciation is due Dr. Oberholser for his unexampled offer of certain manuscript notes,—an appreciation which is in no wise lessened by my own inability to bring myself to make personal use of the results of his investigations.

San Rafael Heights, Pasadena, Calif.

SUPPLEMENTARY NOTES ON THE BIRDS OF DUTCHESS COUNTY, N. Y.

BY MAUNSELL S. CROSBY.

WHEN the Rhinebeck Bird Club issued 'A Preliminary List of the Birds of Dutchess County, N. Y.,' (1921) lack of funds made it impossible to annotate the various species as fully as was desirable and, as indicated in the prefatory remarks, its chief object was to stimulate local students to further field work, the writer having in mind the eventual publication of a completely annotated list, after he should have obtained all possible assistance from his fellow-students and visited every corner of the fairly large area embraced by the report.

As some of the observations thus obtained are of sufficient interest to warrant publication, they are given herewith. Seven species have been added to the original number of 229 and two have been relegated to the hypothetical list until better proof of their occurrence is obtained. Further, the year 1921 was so unusual on account of the very early migration of many species of land birds both in spring and autumn, that the earliest dates of arrival have been advanced in a great number of instances, and so all species are mentioned whose dates of earliest arrival or latest departure have been altered. The name of the observer is given when other than the writer. Species added to the list are indicated by an asterisk.

A few words concerning the territory covered will not be amiss. According to the United States Department of Agriculture's 'Soil Survey of Dutchess County, New York,' issued March 30, 1909, it is bounded by the Hudson River on the west, by the State of Connecticut and less than a mile of the State of Massachusetts on the east, by Columbia County on the north and by Putnam

County on the south. "It is included between the parallels of 42° 27′ and 42° 5′ north latitude, and meridian 74° west from Greenwich passes about a mile west of the most western point in the county. The county comprises 511,872 acres or approximately 800 square miles."

To quote the Survey further: "Dutchess County possesses an uneven or diversified surface. It has no very extensive level or undulating areas, but hills and ridges . . . are common . . . cut by a number of trough-like valleys. . . . The elevations . . . range from sea-level on the Hudson River, which here has a tidal flow [not brackish, however], to a little over 2300 feet on the highest mountain [Brace Mt.] in the extreme northeast corner of the county. . . . The mountainous part of the county lies along the southern and eastern boundaries. The Fishkill Mountains, which are a part of the Hudson Highlands, begin at the extreme southwest corner of the county [and] continue along the southern boundary. . . . North of Tenmile River . . . the mountainous topography follows the eastern side of the Dover Valley, continuing along the Connecticut State line . . . culminating in Brace or Monument Mountain . . . and on into the State of Massachusetts, where there are still higher points.

There are three main interior valleys . . . [whose] trend is from northeast to southwest . . . the Wappinger Valley, . . . the valley of Fishkill Creek . . . and . . . the . . . valley occupied by Tenmile River and its tributaries." The first two flow into the Hudson River, the last-named into the Housatonic. There are also several smaller creeks and a number of ponds, either artificial or dammed by debris deposited by glaciers.

The region has been settled since 1682, and contains many flourishing towns and two cities, mostly near the Hudson. The county is mainly agricultural, but there is much second growth woodland, especially in the more rugged parts, consisting chiefly of hardwoods, the hemlock being the commonest evergreen.

Most of the birds of the region belong to the Transition Fauna, but a few Carolinian and Canadian species are also to be found. In the former group are the Acadian Flycatcher, Fish Crow, Orchard Oriole, Cardinal, Rough-winged Swallow, Worm-eating Warbler, Blue-winged Warbler, Louisiana Water-Thrush and

Hooded Warbler; in the latter are the Blue-headed Vireo, Nashville, Black-throated Blue, Black-throated Green and Canada Warblers, Brown Creeper and Hermit Thrush. There is only one county record for the Cardinal, which is also a nesting record.

The Hudson River being a highway of migration, such species as the Olive-sided Flycatcher, Tennessee, Bay-breasted, Cape May and Mourning Warblers are probably oftener found than elsewhere in the same latitude. On the other hand, the long settlement of the county may account for the scarcity of Ducks, Owls, Martins, Cliff Swallows and Tree Swallows, and for the apparent absence of the Upland Plover.

Podilymbus podiceps.—PIED-BILLED GREBE.

Earliest spring arrival March 22, 1922, on Hudson River north of Tivoli. Earliest autumn arrival on Hudson River, July 27, 1921 (J. T. Nichols and Crosby). Seven partly-grown young seen in a slough near Jackson Pond, May 14, 1922 (Allen Frost, George W. Gray and Prof. Charles W. Moulton).

Gavia immer.—LOON.

One seen at Cruger's Island, April 17, 1921.

Larus argentatus.—HERRING GULL.

Latest spring departure, May 18, 1922, Rhinebeck.

Larus philadelphia.—BONAPARTE'S GULL.

Observed on Hudson River near Poughkeepsie, April 9, 1921 (Ludlow Griscom), and near Beacon, September 17, 1921.

Sterna caspia.—CASPIAN TERN.

A pair of these birds observed by the writer for a period of ten minutes with × 10 binoculars at a distance at times of not more than 50 yards at Cruger's Island, April 30, 1920. A Herring Gull was flying about near them, so that an admirable comparison of size was possible. The size of the bill and shape of the tail were readily noted.

Hydrochelidon nigra surinamensis.—BLACK TERN.

An individual in full breeding plumage watched by the writer with binoculars for a considerable time on May 14, 1914, as it flew erratically hither and thither over the Mill Pond on the Landsmanskill, Rhinebeck. It frequently came very close to the observer.

Mergus americanus.—AMERICAN MERGANSER.

Latest spring departure May 5, 1922, Cruger's Island.

Mergus serrator.—RED-BREASTED MERGANSER.

Earliest spring arrival April 9, 1922, Cruger's Island. Latest spring departure April 15, 1916, Poughkeepsie (Prof. F. A. Saunders). A pair observed on Wappingers Creek near Poughkeepsie, December 4, 1921 (Frost and Gray).

***Lophodytes cucullatus.**—HOODED MERGANSER.

Three males and two females in Vanderberg Cove, Rhinebeck, March 25, 1922.

Anas platyrhynchos.—MALLARD.

Earliest spring arrival March 30, 1921, Cruger's Island. Latest spring departure May 1, 1920, Cruger's Island.

Anas rubripes tristis.—BLACK DUCK.

Latest spring departure May 21, 1922, Cruger's Island (Griscom and Crosby). As about 75 were seen in flocks, they were unquestionably migrants.

Chaulelasmus streperus.—GADWALL.

Two additional records for the species are: April 2, 1922 (Griscom and Crosby), and April 9, 1922, one bird being seen each time at Cruger's Island.

Mareca americana.—BALDPATE.

Earliest spring arrival April 1, 1922, Cruger's Island (Griscom and Crosby). Latest spring departure April 9, 1922, Cruger's Island.

Nettion carolinense.—GREEN-WINGED TEAL.

Earliest spring arrival March 25, 1922, Cruger's Island. Latest spring departure May 1, 1922, Cruger's Island. 22 seen on April 2, 1922.

Querquedula discors.—BLUE-WINGED TEAL.

Earliest spring arrival March 30, 1921, Cruger's Island. Latest spring departure May 1, 1922, Cruger's Island. December record possibly an error and should be disregarded.

***Spatula clypeata.**—SHOVELLER.

A pair and a single drake at Cruger's Island both on April 22 and 27, 1922. On April 30 a single drake was found, but none on May 1 or thereafter.

Dafila acuta.—PINTAIL.

Latest spring departure April 30, 1922, Cruger's Island.

Marila marila.—GREATER SCAUP DUCK. (See next species.)

Marila affinis.—LESSER SCAUP DUCK.

Both species seem to be common transients on the Hudson River, the latter being seen the more often and also occurring on Jackson Pond, away from the river. On several occasions there have been two or more observers present and the birds were so close that a satisfactory idea of size and color of head was obtained. No actual specimens have been identified in the hand.

***Marila collaris.**—RING-NECKED DUCK.

A pair in Vanderberg Cove, Rhinebeck, satisfactorily seen both at rest and in flight April 1, 1922 (Griscom and Crosby). The drake was especially studied and his general Scaup-like appearance, dark color of back, characteristic high crown of head and gray instead of white stripe in the wing were all noted with binoculars at about 75 yards distance.

Clangula clangula americana.—GOLDEN-EYE.

Earliest spring arrival March 10, 1922, Cruger's Island. The published January record proves to have been nearer New York City than Dutchess County.

Charitonetta albeola.—BUFFLE-HEAD.

Earliest spring arrival April 2, 1922, Cruger's Island. (Griscom and Crosby).

Erismatura jamaicensis.—RUDDY DUCK.

One observed March 31, 1921, Morgan Lake, Poughkeepsie, and another April 2, 1921, Cruger's Island.

Branta canadensis canadensis.—CANADA GOOSE.

Four seen flying north May 5, 1922, Cruger's Island.

Cygnus olor.—MUTE SWAN.

The Rhinebeck flock of this introduced species was trapped and kept enclosed during the winters of 1920–21 and 1921–22, owing to the loss of several young by migration in a previous season. On May 11, 1922, a female was sitting on her nest on the railroad embankment not more than six feet from the main tracks. She appeared unruffled by the passing trains, while her mate, standing guard alongside, showed only slightly more interest. On June 21 a Swan was swimming in the cove with several cygnets.

Botaurus lentiginosus.—AMERICAN BITTERN.

Earliest arrival April 6, 1921, Millbrook (Mrs. Susan Sackett).

Ardea herodias herodias.—GREAT BLUE HERON.

Earliest spring arrival April 2, 1922, Poughkeepsie (Frost). Earliest autumn arrival July 17, 1921, Rhinebeck. A wintering bird seen January 30, February 1 and 14 near Vassar College, Poughkeepsie (Gray).

Butorides virescens virescens.—LITTLE GREEN HERON.

Latest autumn departure October 11, 1921, Rhinebeck.

Rallus virginianus.—VIRGINIA RAIL.

Earliest spring arrival April 10, 1921, Brick-yard Swamp, Poughkeepsie (Frost, Griscom and Crosby).

Porzana carolina.—SORA.

Earliest spring, arrival April 24, 1921, Brick-yard Swamp, Poughkeepsie (Frost, Gray, Moulton and Crosby).

Gallinula galeata galeata.—FLORIDA GALLINULE.

Earliest arrival April 16, 1922, Cruger's Island. Latest departure October 16, 1921, Cruger's Island (Frost and Crosby).

Fulica americana.—COOT.

Latest autumn departure November 19, 1921, Cruger's Island, (Griscom).

Gallinago delicata.—WILSON'S SNIPE.

Seven wintered successfully in Brick-yard Swamp, Poughkeepsie, 1920–21, being visited every month from December to May and several seen each time. Latest spring departure May 15, 1921, Brick-yard Swamp, Poughkeepsie (Frost, Gray, Moulton, Robert Cushman Murphy and Crosby). Latest autumn departure December 11, 1921, Brick-yard Swamp, Poughkeepsie (Frost, Gray, Moulton and Crosby). The swamp froze up completely during the winter of 1921–22 and no Snipe were found after December 11.

***Canutus canutus.**—KNOT.

A single, tame individual discovered among a number of Killdeer on the shore of Halcyon Lake, Pine Plains, August 21, 1921, by Griscom and followed up by him, Frost and the writer, being approached within ten yards. It was an immature bird without a trace of bay on the lower parts, but the large size, stocky build, uniform light gray tone of the upper parts and the absence of a white stripe in the wing, made a positive identification as soon as the absolute size could be determined by direct comparison. The observers were well aware of the fact that the bird was noteworthy. It was carefully studied and watched for nearly an hour, and it is pertinent to add that Griscom has been perfectly familiar with this plumage of the species in life for many years.

***Pisobia fuscicollis.**—WHITE-RUMPED SANDPIPER.

A record, hitherto overlooked, by J. P. Giraud, Jr., at Poughkeepsie. ('Birds of Long Island,' 1844; page 242.)

Ereunetes pusillus.—SEMIPALMATED SANDPIPER.

Earliest spring arrival May 14, 1922, Jackson Pond (Murphy and Crosby). Latest spring departure June 5, 1921, Brick-yard Swamp, Poughkeepsie (Frost).

Totanus melanoleucus.—GREATER YELLOW-LEGS.

Latest spring departure May 15, 1921, Poughkeepsie (Frost). Latest autumn departure September 20, 1921, Cruger's Island (Frost and Crosby).

Totanus flavipes.—LESSER YELLOW-LEGS.

Latest autumn departure October 16, 1921, Cruger's Island (Frost).

Tringa solitaria solitaria.—SOLITARY SANDPIPER.

Earliest spring arrival April 22, 1922, Cruger's Island. Unusually abundant May 14, 1922, when about two dozen were seen at Jackson Pond and six or eight more elsewhere (Murphy and Crosby).

***Pluvialis dominicus dominicus.**—AMERICAN GOLDEN PLOVER.

On September 20, 1921, while the writer was standing on the railroad fill between Cruger's Island Marsh and the Hudson River, a bird which was unmistakably a Plover, about the size of a Killdeer, flew south directly overhead, about 150 feet up, whistling "whee-dloo, whee-dloo." Its wing-strokes were short, powerful, "snappy" and slow and its flight was direct. The writer is confident that it was a Golden Plover, being familiar

with the size, flight and notes of the four other common eastern Plovers. The axillars appeared to be white

Oxyechus vociferus.—KILLDEER.

Earliest spring arrival March 6, 1921, Rhinebeck. A flock of 35 seen at Brick-yard Swamp, Poughkeepsie, July 27, 1921 (Nichols and Crosby), and 58 at Halcyon Lake, Pine Plains, August 21, 1921 (Frost, Griscom and Crosby).

Charadrius semipalmatus.—SEMIPALMATED PLOVER.

Probably a regular transient. Add the following to single published record: one on August 21, 1921, Halcyon Lake, Pine Plains (Frost, Griscom and Crosby), another on May 14, 1922, Jackson Pond (Murphy and Crosby), five on May 20, 1922, Jackson Pond (Griscom and Crosby), and two on May 21, 1922, Halcyon Lake (Griscom and Crosby).

***Arenaria interpres morinella.**—RUDDY TURNSTONE.

One of these birds seen alighting with a flock of six Lesser Yellowlegs August 7, 1921, Brick-yard Swamp, Poughkeepsie, by Frost, who examined it within 50 feet with binoculars for about four minutes whereupon all arose and departed.

Zenaidura macroura carolinensis.—MOURNING DOVE.

One seen February 13, 1921, Rhinebeck. It was flying erratically and low and alighted in the snow only to fly off when approached.

Accipiter velox.—SHARP-SHINNED HAWK.

One seen January 16, 1921, Rhinebeck, attacking a sparrow-trap which contained Chickadees. It was frightened away and did not return.

Buteo platypterus platypterus.—BROAD-WINGED HAWK.

Until further proof of its early arrival is obtained the published March record should be disregarded. Earliest spring arrival April 22, 1916, Rhinebeck. An adult, no doubt breeding, seen and heard at Hamersley Lake (altitude 815 feet) June 7, 1922 (Frost, Gray and Crosby).

Falco columbarius columbarius.—PIGEON HAWK.

Until further proof of its early arrival is obtained the published March record should be disregarded. Earliest spring arrival April 24, 1921, Manchester Bridge (Frost and Crosby).

Pandion haliaetus carolinensis.—OSPREY.

Earliest spring arrival April 1, 1921, Rhinebeck.

Aluco pratincola.—BARN OWL.

Heard repeatedly from February to July, 1921, on his farm near Poughkeepsie by Gray, who in 1916 cared for a recently fledged bird from the same locality. A Barn Owl was also killed there in May, 1921.

Cryptoglaux acadica acadica.—SAW-WHET OWL.

A second county record of this species April 2, 1922, Cruger's Island (Griscom and Crosby).

Coccyzus erythrophthalmus.—BLACK-BILLED CUCKOO.
Latest departure October 12, 1921, Rhinebeck (Mrs. James F. Goodell).

Sphyrapicus varius varius.—YELLOW-BELLIED SAPSUCKER.
Earliest autumn arrival September 20, 1921, Rhinebeck.

Colaptes auratus luteus.—NORTHERN FLICKER.
Earliest arrival of migrants, March 6, 1921, Rhinebeck, when three were seen and a fourth heard, all at the same time. Only one had been in the neighborhood that winter.

Nuttallornis borealis.—OLIVE-SIDED FLYCATCHER.
Earliest spring arrival May 15, 1921, Rhinebeck (Frost, Murphy and Crosby).

Corvus brachyrhynchos brachyrhynchos.—CROW.
Earliest migrants flying over both morning and afternoon March 6, 1921, Rhinebeck.

Molothrus ater ater.—COWBIRD.
Earliest arrival March 12, 1921 and 1922, Rhinebeck and Poughkeepsie. A number seen at Red Hook, March 13, 1921. None had been seen during that remarkably mild winter, although there are four previous winter records.

Euphagus carolinus.—RUSTY BLACKBIRD.
Earliest spring arrival March 12, 1921, Brick-yard Swamp, Poughkeepsie (Frost and Crosby). Earliest autumn arrival September 20, 1921, Cruger's Island. Latest autumn departure November 19, 1921, Cruger's Island (Griscom and Crosby).

Quiscalus quiscula aeneus.—BRONZED GRACKLE.
Two Grackles collected at Rhinebeck, February 12, 1921, from a small flock which had apparently been wintering near by, were pronounced by Dr. Jonathan Dwight to be typical *aeneus*.

Hesperiphona vespertina vespertina.—EVENING GROSBEAK.
An adult male observed at close range December 4, 1921, Poughkeepsie (Frost).

Pinicola enucleator leucura.—PINE GROSBEAK.
Earliest arrival November 3, 1921, Rhinebeck. Observed a number of times thereafter up to January 20, 1922.

Carpodacus purpureus purpureus.—PURPLE FINCH.
Earliest autumn arrival July 21, 1921, Rhinebeck. The following June dates have been furnished by Miss Mary Hyatt, at Stanfordville: 11, 1887; 3 and 20, 1888; 1 and 16, 1889; 18, 1891. No definite proof of its nesting has been found.

Acanthis hornemanni exilipes.—HOARY REDPOLL.
One individual observed in a flock of Redpolls March 8, 1912, Rhinebeck. It was perched in a linden sapling and observed at a distance of about ten yards. Its general coloring was a great deal whiter than that of the

other birds in the flock, so much as to keep it constantly distinguishable from the rest, and it was apparently both larger and fluffier. It was a stormy day and the wind was northeast. The weather disturbances that season seem to have affected the birds, many Holboell's Grebes having been picked up in the snow during February in New York and southern New England. Further, on March 25, the only county record of the Lapland Longspur was made, at a time when a belated snowstorm was driving Grackles hither and thither and Cowbirds and Song Sparrows to seek shelter in barns and sheds.

Poœcetes gramineus gramineus.—VESPER SPARROW.

Earliest arrival March 26, 1921. Rhinebeck, A belated individual December 22, 1921, Rhinebeck.

Passerculus sandwichensis savanna.—SAVANNAH SPARROW.

A male in full song July 10, 1921, near Millerton; a fledgling August 21, 1921, Halcyon Lake, Pine Plains (Griscom); another male in full song June 10, 1922, near Millerton.

Zonotrichia albicollis.—WHITE-THROATED SPARROW.

Earliest autumn arrival September 9, 1921, Rhinebeck.

Spizella passerina passerina.—CHIPPING SPARROW.

Earliest arrival March 29, 1921, Rhinebeck.

Spizella pusilla pusilla.—FIELD SPARROW.

Earliest arrival March 17, 1912 (Frost).

Passerella iliaca iliaca.—FOX SPARROW.

Earliest spring arrival February 24, 1921, Rhinebeck. Latest spring departure May 1, 1922, Cruger's Island.

Zamelodia ludoviciana.—ROSE-BREASTED GROSBEAK.

Latest departure October 16, 1921, Cruger's Island (Frost and Crosby).

Piranga erythromelas.—SCARLET TANAGER.

Nest containing four eggs in a hemlock June 7, 1922, Hamersley Lake (Frost and Gray).

Petrochelidon lunifrons lunifrons.—CLIFF SWALLOW.

Earliest spring arrival April 19, 1922, Rhinebeck. A breeding colony found at the foot of Mt. Riga, consisting of three nests, June 10, 1922 (Frost and Crosby). One nest was just started, a second practically completed and the third contained one egg.

Iridoprocne bicolor.—TREE SWALLOW.

Nest with adult on it found in a dead stub on the edge of Grassy Lake, Mt. Riga, June 12, 1921 (Frost and Crosby).

Riparia riparia.—BANK SWALLOW.

Earliest arrival April 19, 1922, Rhinebeck.

Stelgidopteryx serripennis.—ROUGH-WINGED SWALLOW.

Earliest arrival April 14, 1922, Brick-yard Swamp, Poughkeepsie. A

bird seen going to its nest in a drill-hole in a cliff along the railroad track at Rhinecliff, June 28, 1922. The nest was still in use on July 7.

Lanius borealis.—NORTHERN SHRIKE. (See next species.)

Lanius ludovicianus migrans.—MIGRANT SHRIKE.

The published records of this species are probably erroneous and should come under *borealis*.

Lanivireo flavifrons.—YELLOW-THROATED VIREO.

Earliest arrival April 12, 1922, Poughkeepsie (Miss Lucy Myers). Latest departure October 2, 1921, Poughkeepsie (Frost).

Lanivireo solitarius solitarius.—SOLITARY VIREO.

Earliest spring arrival April 12, 1922, Poughkeepsie (Miss Myers). Earliest autumn arrival September 6, 1921, Rhinebeck. Three singing males in Turkey Hollow June 8, 1922, led to the discovery of a nest and four eggs four feet up in a hemlock (Frost and Crosby).

Vermivora pinus.—BLUE-WINGED WARBLER.

A nest containing four young and one egg found at Whaley Lake, June 4, 1922 (Frost, Gray and Crosby). Fourteen singing males heard or seen in southern part of county from May 30 to June 7, 1922.

Vermivora leucobronchialis.—BREWSTER'S WARBLER.

Earliest spring arrival May 4, 1922, Rhinebeck. Two others seen later during the migration. Another with young out of the nest at Hyde Park, June 28, 1922 (Gerald Morgan).

Vermivora chrysoptera.—GOLDEN-WINGED WARBLER.

Earliest arrival April 30, 1921, Rhinebeck. A nest containing five Warbler's eggs and one of a Cowbird found May 19, 1922, Rhinebeck.

Vermivora rubricapilla rubricapilla.—NASHVILLE WARBLER.

Earliest autumn arrival August 13, 1921, Rhinebeck. A pair with food in their bills watched for several hours at Mt. Riga, June 12, 1921, without finding the nest.

Vermivora peregrina.—TENNESSEE WARBLER.

Earliest spring arrival May 4, 1922, Rhinebeck. Earliest autumn arrival August 20, 1921, Rhinebeck and Cruger's Island (Frost, Griscom and Crosby).

Compsothlypis americana usneae.—NORTHERN PARULA WARBLER.

Earliest autumn arrival August 8, 1921, Rhinebeck.

Dendroica tigrina.—CAPE MAY WARBLER.

Earliest autumn arrival August 3, 1921, Rhinebeck, and continuously present for some time thereafter.

Dendroica coronata.—MYRTLE WARBLER.

Earliest autumn arrival August 11, 1921, Rhinebeck, and continuously present for some time thereafter.

Dendroica cerulea.—CERULEAN WARBLER.

A third May 14 record made at Poughkeepsie in 1922 by Messrs. Frost, Gray and Moulton when a male and female were observed near the banks of Wappingers Creek. On May 20 they were still there (Griscom and Crosby) and on May 23 the female was seen building a nest 25 feet up in a button-wood beside the creek (Gray). On May 29 the nest contained two eggs (Gray) and early on the 30th the female was on the nest (Charles Johnston and Crosby) and not disturbed. On June 1 the nest had disappeared (Gray), but on the 3d a new nest was found about 42 feet up in a large buttonwood very near the first nest. On June 4 and 10 the female was on the nest (Gray and Crosby). On June 13 the empty nest was found on the ground (Gray), no doubt having been dislodged by a gale which blew all day on the 12th. Hitherto the easternmost recorded nestings of the Cerulean Warbler have been at Ithaca, N. Y., and Marydel, Del., according to data in possession of the Bureau of Biological Survey.

On May 23 and June 4 a second male was heard singing in the vicinity of the above pair. Another male was at Rhinebeck on May 25 and 26 and not found thereafter. On June 22 two were found at Hyde Park, one of which may have been a female. They were not found thereafter (Morgan and Crosby). On June 23 two males were found at Rhinebeck in localities about five miles apart (G. Clyde Fisher and Crosby). One of these was again found on June 24. They were not found afterwards. Previous to 1922 there were only four county records for the species, two in May, one in June and one in July. So far eight individuals have been recorded during 1922.

Dendroica castanea.—BAY-BREASTED WARBLER.

Earliest autumn arrival August 11, 1921, Rhinebeck.

Dendroica fusca.—BLACKBURNIAN WARBLER.

Latest autumn departure October 5, 1921, Poughkeepsie (Frost).

Dendroica virens.—BLACK-THROATED GREEN WARBLER.

A nest containing four eggs found about 18 feet up in a hemlock at Hamersley Lake, June 7, 1922 (Frost, Gray and Crosby).

Dendroica vigorsi vigorsi.—PINE WARBLER.

Earliest spring arrival April 8, 1921, Rhinebeck.

Dendroica palmarum palmarum.—PALM WARBLER.

Only spring record May 4, 1922, Rhinebeck.

Geothlypis trichas trichas.—MARYLAND YELLOW-THROAT.

Earliest arrival April 14, 1922, Poughkeepsie (Walter Smalley).

Wilsonia citrina.—HOODED WARBLER.

Three singing males found at the foot of Mt. Beacon, May 30, 1922 (Gray, Johnston and Crosby). Two pairs seen in the same locality June 5, 1922 (Frost, Gray and Crosby).

Wilsonia canadensis.—CANADA WARBLER.
Earliest spring arrival May 5, 1922, Cruger's Island.

Setophaga ruticilla.—REDSTART.
Latest departure October 11, 1921, Rhinebeck.

Anthus rubescens.—PIPIT.
Latest spring departure May 15, 1921, Rhinebeck (Murphy). This species was unusually common that season.

Mimus polyglottos.—MOCKINGBIRD.
Watched at length and positively identified by Professor F. A. Saunders May 7, 1919, besides being heard singing by a number of other people later. It was near College Avenue, Poughkeepsie, by the north end of the Western Vassar Lake.

Toxostoma rufum.—BROWN THRASHER.
Earliest arrival April 16, 1922, Poughkeepsie (Moulton).

Thryothorus ludovicianus.—CAROLINA WREN.
A second record May 14, 1922, Jackson Pond (Frost).

Troglodytes aedon aedon.—HOUSE WREN.
Earliest arrival April 15, 1922, Rhinebeck.

Nannus hiemalis hiemalis.—WINTER WREN.
Earliest spring arrival March 13, 1921, Rhinebeck (Frost).

Telmatodytes palustris palustris.—LONG-BILLED MARSH WREN.
Earliest arrival May 5, 1922, Cruger's Island.

Sitta canadensis.—RED-BREASTED NUTHATCH.
Earliest autumn arrival August 11, 1921, Rhinebeck, and very common continuously thereafter until winter. One remained till January, 1922.

Regulus calendula calendula.—RUBY-CROWNED KINGLET.
Earliest spring arrival April 2, 1921, Cruger's Island.

Hylocichla aliciae aliciae.—GRAY-CHEEKED THRUSH.
Earliest autumn arrival September 18, 1921, Rhinebeck.

Hylocichla aliciae bicknelli.—BICKNELL'S THRUSH.
Removed to hypothetical list until a specimen is collected in the county.

Hylocichla ustulata swainsoni.—OLIVE-BACKED THRUSH.
Earliest autumn arrival September 1, 1921, Rhinebeck. Latest autumn departure October 21, 1921, Rhinebeck.

Planesticus migratorius migratorius.—ROBIN.
Earliest migrants arrived February 24, 1921, Poughkeepsie (Frost).

Rhinebeck, N. Y.

FORTIETH STATED MEETING OF THE AMERICAN ORNITHOLOGISTS' UNION.

BY T. S. PALMER

THE Fortieth Stated Meeting of the American Ornithologists' Union was held at Chicago, Ill., October 23–27, 1922. This was the first time in its history that the Union ever met in the Middle West as all previous congresses, except a special one in 1903 and the annual meeting in 1915 both of which were held in San Francisco, have convened in cities on the Atlantic seaboard—at Cambridge, New York, Philadelphia, and Washington. In attendance the meeting of 1922 surpassed all expectations and proved to be one of the largest on record.

Attendance.—The list of Fellows present numbered 24 but for the first time included no Founders. Fewer Members than usual were present but the Associates more than brought up the average so that the total attendance of members of all classes was about 150. The Union had the pleasure of welcoming one of its Honorary Fellows, Dr. C. E. Hellmayr, who has recently taken up his residence in Chicago as Associate Curator of Birds in the Field Museum, and several others who came from a distance including Dr. T. G. Ahrens of Berlin, Germany; D. R. Dickey of Pasadena, Calif.; Mrs. J. W. Wheeler of Seattle, Wash.; Dr. W. H. Bergtold of Denver, Col.; Geo. F. Simmons of Austin, Texas; and J. H. Fleming, W. E. Saunders, P. A. Taverner, and Hoyes Lloyd from Canada.

Business Meetings.—The first day as usual was devoted to routine business which occupied two sessions of the Council beginning at 10 a.m. and 2 p.m., a meeting of the Fellows at 4 p.m., and a meeting of the Fellows and Members at 8 p.m. all of which were held in the University Club of Chicago, 76 E. Monroe Street. At the meeting of the Fellows the single vacancy in the list was filled by the election of Dr. Arthur A. Allen of Ithaca, N. Y. At the evening meeting 32 Fellows and Members were present. Following the roll call and the reading and approval of the minutes of the previous meeting the Report of the Secretary was presented showing a total membership of about 1460. (For details see p. 115.)

The Report of the Treasurer was then presented and showed the finances of the Union in a very satisfactory condition.

The election of officers resulted in the reelection of the officers of 1922 as follows: President, Witmer Stone; Vice presidents, George Bird Grinnell and Jonathan Dwight; Secretary, T. S. Palmer; Treasurer, W. L. McAtee; Members of the Council, A. C. Bent, Ruthven Deane, Joseph Grinnell, Harry C. Oberholser, W. H. Osgood, Charles W. Richmond and T. S. Roberts.

On recommendation of the Council 6 Corresponding Fellows and 269 Associates were elected. This increase of 275 members was eleven more than were added in 1921 and with one exception the largest number ever elected. In the election of 5 members selected from among 1200 Associates, California was represented by Donald R. Dickey and Tracy I. Storer, Illinois by John T. Zimmer, Maine by Dr. Alfred O. Gross, and Pennsylvania by Wharton Huber. There are no longer any vacancies either in the list of Fellows or Honorary Fellows, only 9 among the Corresponding Fellows and 5 in the class of Members.

The Committee on Biography and Bibliography through its Chairman, Dr. Palmer, presented a brief report showing progress in the various lines of work. The main effort of the committee during the year has been concentrated on the preparation of the 'Ten Year Index of The Auk.' The slips containing the entries for each volume have been returned after being checked and corrected by the various members of the Index Committee and are now being arranged in a single alphabet. It is hoped that the material can be edited and prepared for publication before the next meeting.

Resolutions were adopted expressing the thanks of the Union to the President and Board of Trustees of the Field Museum of Natural History, to the Illinois Audubon Society, the Chicago Ornithological Society, and the Wilson Ornithological Club for courtesies extended to the members in connection with the meeting.

Public Meetings.—The meetings devoted to the presentation of scientific papers occupied three days, October 24, 25 and 26, from 9.45 A.M. to 5 P.M. with an hour and a half intermission for luncheon which was served each day in a room adjoining the lecture hall. All the sessions were held in the Field Museum of

Natural History, the general meetings in the small lecture hall, the session for technical papers in the botany lecture room on the third floor, and the moving picture session in the new auditorium known as the Simpson Theater. Owing to the length of the program it was necessary to extend the hours of meeting by beginning at 9.45 A.M. except on the first day, and to have two simultaneous sessions on Wednesday morning.

The meeting on Tuesday opened with an address of welcome by Mr. Stanley Field, President of the Board of Trustees of the Field Museum, and a brief response on behalf of the Union by the President, Dr. Witmer Stone. The first number on the program, 'A Sketch of the Wilson Ornithological Club,' was presented by the president of the Club, Prof. T. L. Hankinson, who, speaking in behalf of one of the hosts of the Union, made the paper not only an address of welcome but an appropriate review of the activities and publications of the Wilson Club since its organization. The two groups of papers of most general interest were those relating to habits of birds and to bird banding, on each of which several papers were submitted. Among the contributions on the habits of birds was Mrs. Nice's account of 'The 'Broken Wing' Ruse in Mourning Doves,' Miss Sherman's 'Home Life of the Chimney Swift,' Prof. Herrick's 'Nesting Habits of the White-headed Eagle,' Sheak's 'Observations on Struthious Birds,' Prof. H. B. Ward's 'Notes on the Pelicans of the Yellowstone National Park,' and Dr. Strong's 'Further Observations on the Habits and Behavior of the Herring Gull,' all of which dealt with interesting phases of the life history of important species.

The bird banding papers were grouped together at the morning session on Wednesday and occupied the entire program. The titles included Lincoln's 'Selection of Birds for Banding,' Lyon's 'Methods of Trapping,' Mrs. A. B. Harrington's 'Notes from the Records of the New England Bird Banding Association,' Baldwin's 'Experiments in Bird Banding,' and an interesting summary of bird banding work carried on at Rossitten on the Baltic Sea, presented by Dr. T. G. Ahrens of Berlin. Thus in the course of a single session members had an opportunity of hearing the most active advocates of bird banding in this country and discussing brief reports of banding operations in the Middle West, the New England

States and in Germany. Simultaneously with the bird banding session another session was held in another hall at which seven of the more technical papers were presented, two on bird measurements by Mrs. E. M. B. Reichenberger and Dr. W. H. Bergtold; 'Distribution of the Genus *Momotus*' by Dr. F. M. Chapman, Variations in the Structure of the Aftershaft' by W. DeW. Miller, 'A possible Mutant in the Genus *Buarremon*,' by Dr. Chapman, 'The Status and Distribution of *Larus fuscus* and *Larus cachinnans*' by Dr. Jonathan Dwight, and 'Notes on *Donacobius*' by Ludlow Griscom. The experiment of holding simultaneous sessions proved successful and made possible the presentation of several papers which otherwise could have been read only by title.

Among the contributions of more general interest were Bent's 'Impressions of Arizona,' Simmons' 'Sea Bird Sanctuaries of Texas,' Murphy's account of 'The Whitney South Sea Expedition' and Chapman's 'Summer in Ecuador.' All of these papers were illustrated by lantern slides and furnished not only an account of the birds but also a background of the scenery and characteristic vegetation of the regions described. An interesting discussion of the value of the bird census was presented in two papers by Miss May T. Cooke and Ludlow Griscom. The anatomical papers included Chapin's description of 'The Vocal Organs of the Prairie Chicken,' Miller's 'Variations in the Structure of the Aftershaft' and Dr. Casey Wood's 'Fundus Oculi of some South American Birds.' The exhibition of moving pictures formed the closing feature on the program on Thursday afternoon and attracted a large audience. These pictures included a film from the Biological Survey showing the bird life on the Farallone Islands, Calif., Dr. Roberts' 'Familiar Birds and Mammals in Motion Pictures,' a film loaned by the Miami Aquarium showing the 'Flamingoes of the Bahamas,' presented by L. A. Fuertes, and an interesting series of pictures of wild life in New Brunswick taken by D. R. Dickey showing particularly moose, deer, and the drumming of the Ruffed Grouse.

As a rule speakers were held to the limits assigned on the program. More time than usual was devoted to discussion and with two exceptions papers whose authors were not present were read only by title. As contributions to the programs increase in

number it is evident that greater reliance must be placed on simultaneous sessions or sectional meetings, and it may be necessary to shorten still more the time allotted to certain classes of papers. Judging by the experience of other organizations some of the longer papers can be condensed without serious loss and the time thus gained more profitably devoted to discussions which form one of the most important features of the meetings.

Other Events.—The social gatherings included a dinner for the bird banding members at the City Club, 315 Plymouth Court, on Tuesday evening, the annual dinner at the Auditorium Hotel on Wednesday evening, and a trip to the sand dune region of Lake Michigan in northwestern Indiana on Friday. At the Tuesday evening meeting methods of trapping and banding birds were discussed and plans made to organize a central bird banding association. The annual dinner was served in the banquet hall of the Auditorium Hotel and the members and guests numbered about 130. The entertainment was chiefly of a reminiscent character beginning with a few introductory remarks by the President. The Secretary then reviewed briefly some points of interest connected with former meetings and outings, exhibited a few slides of the principal group pictures of the Union, and pointed out some of the prominent members in each group. Dr. Chapman read from his diary a most interesting account of his first impressions of an A.O.U. meeting, describing in some detail the Washington meeting of 1886, and Mr. Fuertes closed with characteristic imitations of the notes of various birds.

The outing on Friday was one of the most successful and largely attended events of the kind ever enjoyed by the Union. Leaving Chicago at 9.15 A.M. via the South Shore Electric Lines the party travelled about 40 miles to Oak Hill station in Porter County, Ind., east of Miller. From this point the members walked about a mile and a half through the dunes to the south shore of Lake Michigan where, at the cabin of Mr. and Mrs. W. D. Richardson, located at a beautiful spot overlooking the lake, a bountiful luncheon was served. Brief talks on the region were given by several of the members including a very instructive account of the flora by Prof. H. C. Cowles of the University of Chicago, who has made a specialty of the ecology of dune vegetation. Returning the

party took the train at Mineral Springs after having spent several hours in observing the birds and plants in the most interesting part of the sand dune region which forms the site of a proposed National or State Park. On Saturday several of the members made a trip to Desplaines, Ill., where through the courtesy of Mr. Ransom Kennicott, a nephew of Robert Kennicott, they were shown the old home of Robert Kennicott, the school which he attended, the farm where he made his early observations, and his grave in the cemetery at Arlington Heights. An opportunity was also afforded of inspecting the Cook County Forest Preserve and bird refuge of some 26,000 acres.

A very appropriate souvenir of the meeting was contributed by the Chicago Ornithological Society in the form of a pocket leaflet entitled 'A Guide to Trips about Chicago for Observing Birds.' Brief descriptions and directions were given for reaching favorable points from Waukegan south to the Indiana dunes and also several of the city parks. Similar souvenirs might well be provided for future meetings elsewhere.

Results.—The results of the meeting included a transfer of the business office of the Union from Philadelphia to Washington, where during the coming year it will be under the immediate charge of the Treasurer, and the impetus given to bird banding which resulted in the organization of the Inland Bird Banding Association. The field of activity of the new organization will include the Mississippi Valley from the Alleghanies to the Rocky Mountains and from the Great Lakes to the Gulf of Mexico. The officers are: President, S. Prentiss Baldwin of Cleveland, O.; Vice president, Prof. Leon J. Cole of Madison, Wis.; Secretary, William I. Lyon of Waukegan, Ill.; and Treasurer, H. L. Stoddard of Milwaukee, Wis. A notable feature of the Chicago meeting was an exhibit of bird paintings and photographs, modeled after that held in Washington in 1920, which brought together a remarkable collection of pictures illustrating the best work of about 30 American artists. The paintings were admirably arranged in alcoves and on table cases in a special room of the museum and remained on exhibition during the month of November. Exhibitions of this kind stimulate the best work of artists and photographers and afford an unusual opportunity of studying recent progress in ornithological illustration.

The general concensus of opinion seemed to be that the Chicago meeting was highly successful not only in point of numbers but also in the unusual opportunity it afforded many members, heretofore known to each other only by reputation or correspondence, of becoming personally acquainted. The experiment of holding the sessions in October instead of November also seemed to meet with approval.

The Union has accepted the invitation of the Nuttall Ornithological Club to hold its next annual meeting in Cambridge, Mass., in the autumn of 1923. This meeting promises to be a notable one as the Nuttall Club will then celebrate the semi-centennial of its organization and the occasion will be an appropriate time for a review of some of the important ornithological events of the last half century.

PROGRAM.

(Papers are arranged in the order in which they were presented at the meeting. Those marked with an asterisk (*) were illustrated by lantern slides.)

TUESDAY MORNING.

1. A Sketch of the Wilson Ornithological Club. T. L. HANKINSON, Ypsilanti, Mich. (15 min.).
2. The "Broken Wing" Ruse in Mourning Doves. MRS. MARGARET M. NICE, Norman, Okla. (10 min.)
3. Some Observations on Struthious Birds. W. H. SHEAK, Philadelphia, Pa. (20 min.).
4. The Home Life of the Chimney Swift. MISS ALTHEA R. SHERMAN, National, Ia. (20 min.).
5. Bird Notes from the Tennessee Cumberlands. ALBERT F. GANIER, Nashville, Tenn. (15 min.).
6. *A Contribution to the Home Life and Economic Status of the Screech Owl. ARTHUR A. ALLEN, Ithaca, N. Y. (30 min.).

TUESDAY AFTERNOON.

7. *An Eagle Observatory. FRANCIS H. HERRICK, Cleveland, O. (15 min.)
8. *Nest-Life of the White-headed Eagle—Late Phase. FRANCIS H. HERRICK, Cleveland, O. (15 min.).
9. *Notes on the Pelicans of the Yellowstone National Park. HENRY B. WARD, Urbana, Ill. (20 min.).
10. *Some Phases of Bird Photography. A. H. CORDIER, Kansas City, Mo. (40 min.).
11. *Impressions of Arizona. A. C. BENT, Taunton, Mass. (60 min.).

WEDNESDAY MORNING—BIRD BANDING SESSION

12. What Iowa is doing to promote Bird Study. GEORGE BENNETT, Iowa City, Ia. (15 min.).
13. Selection of Birds for Banding. F. C. LINCOLN, Washington, D. C. (20 min.).
14. A few Notes from the Records of the New England Bird Banding Association. MRS. A. B. HARRINGTON, Lincoln, Mass. (15 min.).
15. Methods of Trapping, Experiences or General Practice of Bird Banding. W. I. LYON, Waukegan, Ill. (20 min.).
16. *Bird Banding and Bird Migration at Rossitten on the Baltic Sea. T. G. AHRENS, Berlin (30 min.).
17. *Experiments in Bird Banding. S. PRENTISS BALDWIN, Cleveland, O. (40 min.).

WEDNESDAY MORNING—TECHNICAL SESSION.

18. Remarks on Methods of Measuring Birds. MRS. E. M. B. REICHENBERGER, New York (15 min.).
19. *The Comparative Value of Bird Measurements. W. H. BERGTOLD, Denver, Colo. (15 min.).
20. *Distribution of the Genus *Momotus*. Illustrated by maps. FRANK M. CHAPMAN, New York (20 min.).
21. A possible Mutant in the Genus *Buarremon*. Illustrated by maps and specimens. FRANK M. CHAPMAN, New York (10 min.).
22. Variations in the Structure of the Aftershaft and their Taxonomic Value. W. DE W. MILLER, New York (20 min.).
23. Notes on *Donacobius*. Illustrated by specimens. LUDLOW GRISCOM, New York (10 min.).
24. Status and Distribution of *Larus fuscus* and *Larus cachinnans*. Illustrated by specimens. JONATHAN DWIGHT, New York (20 min.).

WEDNESDAY AFTERNOON.

25. The Great Plains as a Breeding Ground for Water Fowl. HARRY C. OBERHOLSER, Washington, D. C. (15 min.).
26. *The Sea Bird Sanctuaries of Texas. GEO. FINLAY SIMMONS, Austin, Texas (50 min.).
27. *The Whitney South Sea Expedition of the American Museum of Natural History. ROBERT CUSHMAN MURPHY, New York (30 min.).
28. *Further Observations on the Habits and Behavior of the Herring Gull. R. M. STRONG, Chicago, Ill. (25 min.).

THURSDAY MORNING.

29. What can be learned from a Bird Census. MISS MAY T. COOKE, Washington, D. C. (20 min.).
30. The Role of the Bird Census. LUDLOW GRISCOM, New York (20 min.).

31. On a Collection of Birds from the Cape Verde Islands. ROBERT CUSHMAN MURPHY, New York (15 min.).
32. Is Photo-periodism a Factor in Bird Migration? C. W. G. EIFRIG, River Forest, Ill. (15 min.).
33. *The Vocal Organs of the Prairie Chicken. JAMES P. CHAPIN, New York (15 min.).
34. *The Fundus Oculi of some South American Birds and Reptiles. CASEY A. WOOD, Chicago, Ill. (25 min.).
35. Notes on Off-Shore Atlantic Birds. J. T. NICHOLS, New York (15 min.)
36. Present Day Tendencies and Opportunities in Ornithology. WITMER STONE, Philadelphia, Pa. (Read by title.)
37. *Bird Arrivals in Relation to Sunspots. RALPH E. DE LURY, Ottawa, Canada. (Read by title.)
38. The Influence of the Southwestern Deserts upon the Avifauna of California. A. B. HOWELL, Pasadena, Calif. (Read by title.)
39. Laying Cycles in Birds. LEON J. COLE, Madison, Wis. (Read by title.)

THURSDAY AFTERNOON—MOTION PICTURES.

40. *A Summer in Ecuador. FRANK M. CHAPMAN, New York (50 min.).
41. The Farallones. (Exhibition of film of the Biological Survey.) W. L. MCATEE, Washington, D. C. (20 min.)
42. Familiar Birds and Mammals in Motion Pictures. THOS. S. ROBERTS, Minneapolis, Minn. (45 min.).
43. Flamingoes of the Bahamas. (Film loaned by the Miami Aquarium.) L. A. FUERTES, Ithaca, N. Y. (15 min.).
44. A Pre-view of New Brunswick Wild Life in Motion Pictures. DONALD R. DICKEY, Pasadena, Calif. (60 min.).

FELLOWS AND MEMBERS PRESENT.

FELLOWS.—A. A. Allen, W. B. Barrows, A. C. Bent, W. H. Bergtold, F. M. Chapman, Ruthven Deane, Jonathan Dwight, J. H. Fleming, E. H. Forbush, L. A. Fuertes, Lynds Jones, W. L. McAtee, R. C. Murphy, H. C. Oberholser, W. H. Osgood, T. S. Palmer, C. W. Richmond, T. S. Roberts, John H. Sage, W. E. Saunders, Witmer Stone, P. A. Taverner, W. E. C. Todd and Otto Widmann—Total 24.

HONORARY FELLOW.—C. E. Hellmayr.

MEMBERS.—S. P. Baldwin, A. W. Butler, D. R. Dickey, B. T. Gault, Ludlow Griscom, Harry Harris, F. H. Herrick, F. C. Lincoln, J. T. Nichols, S. N. Rhoads, C. H. Rogers, Miss A. R. Sherman, T. C. Stephens, R. M. Strong, M. W. Swenk, C. A. Wood, and A. H. Wright—Total 17.

ELECTION OF FELLOWS, MEMBERS, AND ASSOCIATES.

FELLOWS:

Dr. Arthur Augustus Allen, Ithaca, N. Y.

CORRESPONDING FELLOWS:

Dr. Arthur Gardiner Butler, 124 Beckenham Road, Beckenham, Kent, England.

A. H. Chisholm, Daily Mail Office, Brisbane, Queensland, Australia.

Dr. William David MacGillivray, Broken Hill, New South Wales, Australia.

Dr. Erwin Streseman, Königl. Museum für Naturkunde, Invalidenstrasse 43, Berlin, Germany.

Dr. Arthur Landsborough Thomson, 9 Addison Gardens, Kensington, London, W. 14, England.

Dr. Claude Buchanan Ticehurst, 121 London Road North, Lowestoft, England.

MEMBERS:

Donald Ryder Dickey, San Rafael Heights, Pasadena, Calif.

Dr. Alfred Otto Gross, Bowdoin College, Brunswick, Maine.

Wharton Huber, 225 St. Marks Square, Philadelphia, Pa.

Tracy Irwin Storer, Museum Vertebrate Zoology, Berkeley, Calif.

John Todd Zimmer, Field Museum Natural History, Chicago, Ill.

ASSOCIATES:

The Associates elected number 269. The names of those who qualify will appear in the annual Directory of Members in 'The Auk' for April and consequently are omitted here to save space.

REPORT OF THE SECRETARY

BY T. S. PALMER

FIVE years having intervened since the election of the present incumbent as Secretary of the Union it is fitting that a brief statement should be submitted showing the progress during this time.

Since 1917 we have passed through a period of war and reconstruction, a widespread epidemic of influenza which prevented the holding of one of the regular meetings, and have encountered unusual obstacles in publication due to strikes, high cost of paper and printing. During all this time the Union has maintained its work with unimpaired vigor, has increased the size of its journal without raising its dues, and has materially enlarged its membership and resources. Since 1917 it has increased its membership from 891 to about 1457 and its invested funds from about $3600

to nearly $10,000 and in addition has a special Brewster Memorial Fund of $7,200 the income from which is awarded biennially for the most meritorious paper on American birds.

Membership: The Union now has members in every State except Mississippi; in Alaska, Hawaii and the Philippine Islands and in about 20 foreign countries. The distribution of membership as compared with conditions in 1917 and 1921 is shown by the following statement:

Year	Fellows	Retired Fellows	Honorary Fellows	Corresponding Fellows	Members	Associates	Total
1917	49	3	14	59	77	689	891
1921	46	4	20	80	91	1110	1351
1922	49	5	25	87[1]	91	1200	1457

The total gain for the five year period is about 566 and the increase for the past year about 106. The gain during the year comprised the election at the last annual meeting of 14 Corresponding Fellows and about 250 Associates but this apparent increase of 264 was offset by losses of 12 by death, 28 by resignation, 57 by failure to qualify, and a number by delinquency. The deaths included those of 2 Corresponding Fellows, 1 Member and 9 Associates. The effort to increase the number of life members has made little progress and has been offset by the death of 2 life associates. The Union now has nearly 50 life members including 6 Fellows, 11 Members and more than 30 Associates. The foreign membership includes 25 Honorary Fellows and 87 Corresponding Fellows. The Honorary List is full for the first time in several years, only a single vacancy remains in the class of Fellows, and there are 9 vacancies in the class of Members and 13 in that of Corresponding Fellows.

Activities of Members Abroad: During the past year Ernest G. Holt who has been collecting in Brazil has returned home and N. Gist Gee has resumed his work in China with headquarters in the vicinity of Pekin. Beck has continued explorations in the South Pacific in behalf of the American Museum and H. C. Raven has been engaged in collecting for the same institution in Australia.

[1] During the meeting the names of Adolf B. von Echt and Frederic Ringer were transferred to the Deceased List and six new names added (see p. 115). Total now 91.

Henry W. Fowler has left for a year's stay in Honolulu and Dr. William E. Hughes has made a trip to the Fiji Islands. South America, as in recent years, has been the scene of considerable activity. William Beebe and John Tee Vann occupied the tropical station of the New York Zoological Society in British Guiana for several months during the winter and early spring. Dr. Casey Wood also spent some time at Georgetown and made a trip into the interior of British Guiana. Dr. F. M. Chapman and Geo. K. Cherrie have been engaged in work in the western part of the continent chiefly in Ecuador, and Zimmer has recently left for South America to collect for the Field Museum of Natural History. Several members have been in Europe. Dr. Dwight and Dr. Casey Wood visited England, C. H. Rogers has been in France and T. Gilbert Pearson spent some weeks in England, France and Holland in connection with matters of bird conservation. Mrs. V. M. Reichenberger was occupied in special work in Munich and Dr. Leonard Stejneger visited the Commander Islands in Siberia, and Japan.

The Journal.—The total number of complete sets of 'The Auk' now known is 191 of which 79 are in public libraries and 112 in private ownership. Much interest has been aroused in completing sets and it is possible that the total may be increased to 200 in spite of the fact that several owners of such sets have recently died and their volumes have changed hands or become dispersed. In the last five years the Union has disposed of eight full sets and has furnished the volumes or numbers necessary to complete ten others.

Service.—In addition to answering a large number of miscellaneous inquires and requests of various kinds, efforts have been made to assist members and public libraries in completing sets of 'The Auk' and furnishing full names and biographical data regarding members or other ornithologists.

The survey of the principal collections of birds undertaken some time ago has been continued and a special inquiry has been made as to the relative completeness of some of these collections. From the meager data at present available it is perhaps safe to say that at least 250 of the 2810 genera recognized in Sharpe's 'Hand List of Birds' are at present unrepresented in any of the museums of the

United States. This estimate refers only to recent forms and does not include any of the genera of fossil birds. Data are wanting as to the number of fossil genera represented in American collections but will probably be available later. In this connection it may be observed that specimens of fossil birds unlike those of recent forms can be readily duplicated and there is no reason why some of our larger museums should not have not merely a representative but a practically complete series of plastotypes representing the genera of fossil birds of the world.

The Coming Year: The work of immediate importance for 1923 is the completion and publication of the Ten Year Index of The Auk for the years 1911–1920. This index is already well under way but some time and considerable work will be required for its completion.

The coming year will mark the anniversaries of two events of considerable interest to American ornithologists, the fiftieth anniversary of the founding of the Nuttall Ornithological Club and the centennial of the birth of Spencer Fullerton Baird, founder of the United States National Museum and the United States Fish Commission. Both of these events should be observed with appropriate exercises. A National Committee has been organized to determine the most appropriate form for a Baird Memorial and the Union having been invited to participate in this undertaking, the invitation has been accepted and the Secretary has been appointed as the representative of the Union.

DECEASED MEMBERS, 1921–1922.

JOHN LEWIS BONHOTE, Corresponding Fellow, aged 47, died at Bournemouth, England, October 10, 1922.

WILLIAM HENRY HUDSON, Corresponding Fellow, died in his 81st year at London, England, August 18, 1922.

GEORGE SPENCER MORRIS,[1] Member, died in his 55th year at Olney, Philadelphia, Pa., April 12, 1922.

WILLIAM BOWEN BOLTON, Life Associate, died at Morristown, N. J., in September, 1922.

CHARLES MORLAND CARTER, Associate, died in his 70th year at St. Joseph, Mo., in August, 1922.

HOWARD EATON, Life Associate, died in his 72d year at Wolf, Wyo., April 5, 1922.

[1] For obituary notice see Auk, Vol. XXXIX, pp. 451–453.

THOMAS HOOPES JACKSON,[1] Associate, died in his 74th year at West Chester, Pa., February 27, 1922.

ENOS ABIJAH MILLS, Associate, aged 52, died at Longs Peak, Colo., September 21, 1922.

JAMES STIRTON WALLACE, Associate, aged 54, died at Smith Falls, Ontario, July 24, 1922.

CHARLES HENRY WEEKES, Associate, died at Harwich, Mass., November 14, 1921.

FRANK ERNEST WOODWARD,[2] Associate, aged 66, died at Brookline, Mass., August 5, 1921.

ROY CHURCH WOODWORTH,[3] Associate, died in his 45th year at Kansas City, Mo., June 29, 1922.

GENERAL NOTES

Notes on the Diving of Loons.—Mr. Edward Howe Forbush's recent interesting report entitled 'Some Underwater Activities of Certain Wildfowl' (Bulletin 8, Massachusetts Department of Agriculture), and the conclusive evidence therein offered, that a Loon may or may not use its wings when swimming under water, brings to mind two absolutely contrary experiences of mine.

Once when I was fly-fishing just outside a shallow, muddy backwater above the upper dam on Lake Mooselukmaguntic in Maine, my guide and I managed to corner a Loon, and I have never forgotten my surprise when I saw it apparently fly under water, as it escaped just beneath our boat which we had placed across the outlet. It certainly was using its wings, but whether or not it was using its feet I am unable to say.

On June 10, 1920, I found a Loon sitting on a nest on an island in Upper Sisladobsis Lake, Maine. The nest was built among some sweet gale bushes at the top of a rather steep bank, and perhaps four feet from the edge of the water. A well-worn runway led from it down to a small, shallow pool, several feet across, and with an outlet perhaps a foot wide between two boulders leading to deeper water.

At one side of this pool lay the stub of a large dead tree extending out to a huge boulder ten or fifteen feet beyond, and we ran the bow of our canoe up on the other side, placing it in such a position that the bird when escaping would have to go under it.

Then leaving my guide in the stern of the canoe I stepped slowly and carefully from boulder to boulder until I had approached within perhaps three feet of the nest, and reaching down, actually pulled some small dead brush from in front of it, so that my guide could better see the bird.

---

[1] For obituary notice see Auk, Vol. XXXIX, pp. 299–300.
[2] " " " " " " XXXIX. pp. 453–454.
[3] " " " " " " XXXIX. pp. 592–593.

Quoting from my notes, made immediately afterwards, "I again reached down closer to her to pull some of the growing bushes aside, and could almost have stroked her beautiful head, had I dared. She made a few hesitating movements with her wings, as if trying to make up her mind whether to 'beat it' or not, and then when I put my hand a trifle too close to her, let out a blood curdling yell and a second or two afterwards cannonballed by my legs, down the bank, over two boulders, and into the pool beyond. First she tried to jump the dead tree that lay there, but finally went out through the narrow outlet, and dove under the rear end of our canoe.

"In the meantime I had run along the tree and clambered onto a large boulder and was in a position immediately above her, where I could see her every movement in the clear water beneath.

"She used her wings when above the water, but upon diving, swam out into the lake, beneath the water and in plain sight for fifty feet or more, using only her feet as a means of propulsion, her wings being held close to her side."

I have given the above details at length, in order to show that that bird certainly was frightened, and supposedly would have used every possible means, including her wings, to accelerate her escape.—Frederic H. Kennard, *Newton Centre, Mass.*

King Eider in Maine.—I find on looking over my notes, an unrecorded occurrence of the King Eider (*Somateria spectabilis*), in Maine.

On June 13, 1918, while paddling across Duck Lake in Penobscot County, I saw four ducks, apparently a male and three females, swimming ahead of me, which without glasses, and in poor light, I was unable to identify. I kept watch on the ducks, while my guide made a hurried trip to a farmhouse about a half mile away, and borrowed a gun, with which I was able to collect one of them. It proved to be an immature male of the year before. The three females stayed about the lake during the afternoon but were lost track of at supper time. The next day we saw one lone female swimming about. Duck Lake is perhaps seventy miles from the seacoast.—Frederic H. Kennard, *Newton Centre, Mass.*

"The Replete Angler."—On June 13, 1922, at high water mark, on Wingersheek beach just north of Gloucester, Mass., I found partly imbedded in the sand, a very much inflated and badly decomposed body of an Angler or Goose Fish (*Lophius piscatorius*). Investigation discovered the fact that an adult female White-winged Scoter (*Oidemia deglandi*) had fallen a victim to the fish's voracious appetite. The bird was intact and fully feathered but decomposition had advanced too far to ascertain whether it had been shot previously to being swallowed. As no bones appeared to be broken I am inclined to think that it had been swallowed alive and furthermore a flock of these ducks had been observed feeding off the shore for a fortnight before I found the fish. Aside from the Angler's head, which is wholly disproportionate to the size of its body, the duck and the fish compare favorably in weight and size.

It has always aroused my wonder that the ever present danger of being seized from below by some predatory fish or other animal, has not developed in ducks and other sea birds a nervous apprehension which would be passed on to future generations. In point of fact, however, such nervousness seems to be entirely lacking. In this case the duck had paid with its life the price of negligence, the fish that of gluttony.—LANGDON GIBSON, *Schenectady, N. Y.*

Whooping Crane in Nebraska.—I recently received a letter from Mr. F. G. Caldwell of Lincoln, Neb., who says: "I have just returned from a hunting trip in the sand hills. Saw a Whooping Crane on Red Deer Lake, in fact it stayed there all the time I was there. I was within 50 feet of it one day. It still had its brown feathers." Mr. Caldwell is sending me an adult in the flesh which was killed five years ago and which has been frozen up in his ice cream plant ever since. He knows the bird well and this, in the face of the fancied extermination of the species, seems to make the occurrence worth recording.—LOUIS AGASSIZ FUERTES, *Ithaca, N. Y.*

Yellow-crowned Night Heron in Pennsylvania.—Early in the morning on the 23rd of April 1922, while rambling through the woods along a quiet creek near my home in Delaware County, Pa, a good-sized bird flew up in front of me and after flying a short distance lit in the branches of a large beech. At first glance I took it for a Green Heron, but upon closer scrutiny I saw that it was quite different and was about the size and shape of the Black-crowned Night Heron, though not so sturdy. It was grayish blue in color with the head and part of the neck black, the crown and cheek patches white. Rather short plumes were also in evidence. It was evidently the Yellow-crowned Night Heron, a species which has occurred in Pennsylvania on one or two previous occasions but always in August so far as I can ascertain. This bird was not breeding, as it was always alone on all of the occasions on which I saw it up to May 28, when it was seen for the last time.

At my request Mr. Julian K. Potter, secretary of the Delaware Valley Ornithological Club, came out to Glenolden to see the bird, but as luck would have it, it could not be found on that day. On a later visit ,however, the bird appeared and Mr. Potter confirmed my identification.

It spent the month or more that it was with us feeding on small fish along the stream and never resented my presence, simply flying to a nearby tree if I approached too closely.—JOHN A. GILLESPIE, *Glenolden, Delaware Co., Pa.*

An Interesting Adaptation.—During the first week of October, 1922, a lady, coming into the Boston Society of Natural History, stated that she had just seen a bird of snipe-like character standing on the stone rim of the Boston Public Garden pond, from which it would occasionally *dive* for fish.

This appeared strange indeed to me, and a trip through the bird room revealed the Little Green Heron (*Butorides v. virescens*, which seemed to fit nearest a very sketchy description.

At my first opportunity I sought that part of the pond where this strange bird had been seen. There on the stone rim *was* a Little Green Heron walking stealthily along, its attention concentrated on the water at its side, and quite oblivious to the afternoon gathering of adults, children, and dogs on leashes, that, under an unusually hot sun for the season, walked close by.

For some time I watched the bird. After a while it turned cautiously until facing the water, toes at the rim of the stone, its neck stretched out at full length, and suddenly, as a swimmer in a race plunges from the marble rim of a tank, it plunged into the water, completely submerged; came to the surface with a goldfish which it immediately swallowed, and, raising its wings, flew back, only a matter of two wing-strokes, to the stone border.

Twice I watched it do this, and I had solved the mystery of the snipe-like bird that dove for fish.

The sojourn of this Heron at the Public Garden pond was about six weeks, according to a rather observing man who navigates one of the "swan boats."—W. Sprague Brooks, *Boston Society of Natural History, Boston, Mass.*

Natal Plumage of Belonopterus cayannensis.—As far as I know the natal plumage of this interesting species has not been described. On July 29 1922, a young specimen was brought to me, alive, which could not have been more than twenty-four hours old, as it was not able to run properly. This is a very early date as this Lapwing hardly ever breeds before September. As it was impossible for me to keep the bird alive I killed and prepared it. Its bill was black, the lower mandible at the mouth a horn color. The feet were dark plumbeous and the iris, which is pink in the adult, was of a plumbeous gray hue. The top of head is buff, dotted with black, which forms a band on the occiput and also one extending on each side of the neck faintly indicated at first but ending in a solid patch of black on the upper breast. Rest of lower parts also throat white. Neck white, rest of upper parts buff with numerous black dots and spots except wing, which has a buffish tip, but is white from the carpal angle to the tip. Tail feathers black with buffy tips. There is no trace of the head-crest nor of the wing-spurs, both so conspicuous in the adults. This bird is called "quero-quero" ("I will—I will") by the natives. The young in natal plumage is a trifle larger than a young Killdeer.—W. F. Henninger, *Cachoeira, Rio Grande do Sul, Brazil.*

Golden Plover in Cape May County, New Jersey.—Authentic records for the Golden Plover (*Pluvialis dominicus dominicus*) on the New Jersey coast are so few that it may be of interest to publish the dates of two specimens I have in my collection. On September 28, 1900, while

collecting shore birds from a blind on the beach a mile or two above Sea Isle City, N. J., a single female Golden Plover came to my decoys. I had been shooting on this spot for many years, which at half tide disclosed a large area of sod bank, a favorite feeding spot for shore birds, but this was the only Golden Plover I had seen. On November 23, 1922, Mr. J. E. Godfrey collected a female of the year at Corson's Inlet a little farther north, and sent the specimen to me in the flesh—WHARTON HUBER, *Acad. Nat. Sci., Phila., Pa.*

An Instance of Extreme Precocity in Young Pheasants.—On July 25, 1922, while cutting brush in a wet meadow, on my place in Newton Centre, Mass., I started a female Ring-necked Pheasant from a nest built in a clump of weeds, and which contained nine eggs.

On August 3, I found a female Pheasant lying dead, but still warm, upon the grass in front of the side door of my house. I jumped to the conclusion that my setter dog had probably caught the sitting bird. Hurrying down to the meadow, with a couple of friends, who happened to be with me, however, I was delighted to find the female sitting quietly upon her nest.

Owing to her protective coloration, my friends were at first unable to see her, until I reached over and attempted to part the weeds, when the bird rose into the air cackling and flew away, leaving a nest full of young just hatched, tottery, and some of them still wet. Before I could take a step nearer, every one of the little fellows had run or crawled out of the nest into the grass beyond, and I did not dare move for fear of stepping on some of them. Their fear in this case would seem to have been instinctive.—FREDERIC H. KENNARD, *Newton Centre, Mass.*

The Barn Owl in Washington State.—In his preliminary list of the birds of the Grays Harbor region (Auk, Vol. IX, 1892, pp. 43–44) Lawrence tentatively entered the Barn Owl as a resident, but only on the word of a neighbor, who reported seeing the species twice in February, 1891, near the east Humptulips River, where it seemed to have been attracted by the carcass of a small striped skunk. In 1909 Brooks (Auk, Vol. XXVI, 1909, p. 313) recorded the taking of a single specimen in April near the mouth of Fraser River, in British Columbia. I am indebted to Mr. D. E. Brown, of Seattle, Washington, for the following additional information concerning the status of the Barn Owl on the northwest coast. On July 13, 1915, Mr. J. Hooper Bowles, of Tacoma, collected a bird of the year at Puyallup, Pierce County, Washington; on October 1, 1917, Mr. Carl Lien, now of Clallam Bay, took a female specimen at Point Chehalis, on Grays Harbor; on November 1, 1917, Mr. Lien collected a male in the same locality, and on November 9 reported seeing another bird, which, however, was not taken. On November 25, 1917, Mr. E. A. Kitchin, of Tacoma, flushed a male Barn Owl from an old barn near the tide flats, later collecting it and finding its stomach full of the remains of mice. Professor H. S. Brode, of Whitman College, and Mr. S. H. Lyman, of Dayton, Washington, write that a specimen was taken at the Offner place near Walla Walla on

May 23, 1918, now being in the Whitman College collection, Walla Walla. These records seem to stamp the Barn Owl as a sporadic migrant, principally in the humid Transition Zone of southwestern Washington, but to be looked for at long intervals at moderate altitudes along the southern border of the State as well as along the coast all the way to the Canadian border.—WALTER P. TAYLOR, *U. S. Biological Survey, La Jolla, California.*

Long-eared Owl at Ipswich, Mass., in Summer.—On July 29, 1911, the writer with Messrs. L. B. Fletcher and C. L. Whittle observed a Long-eared Owl (*Asio wilsonianus*), at Ipswich, Mass. The bird was found in a thick growth of pines at the edge of the sand-dunes, where it remained although disturbed and frightened a number of times.

The fact that this Owl was seen in July, suggests that with a mate it might have nested here, and records of this species in Massachusetts are sufficiently uncommon to make the above worthy of note.—CHARLES B. FLOYD, *454 Walcott St., Auburndale, Mass.*

The Saw-whet Owl in Spring at Philadelphia, Pa.—On April 5, 1922, at Holmesburg, Philadelphia, Pa., while searching the upper border of a strip of woods, for a Cardinal's nest, I almost bumped my head against a Saw-whet Owl that was roosting under a dense canopy of honeysuckle vines, five feet high, that covered one of the bushes. The bird flew about fifteen feet and lit on a limb of a bush, a yard from the ground, with its back towards me. It permitted me to approach within two yards, turning its head around to watch me. It then flew about four yards and lit at the same height upon another bush. I approached within three yards before the bird flew to another perch, about ten yards away; both of these times it faced me and quietly and unconcernedly let me approach. It seemed utterly fearless, and gazed at me with wide opened eyes. Under its roost was a pile of 31 pellets, and two feet distant was a similar roost, under a dense canopy of Lonicera vines; beneath this one were 35 pellets, altogether 66 pellets beside piles of excrement, indicating that the bird had spent the winter here. These pellets averaged 1″ × 1¼″ in size, and were ovate or elongate in shape, and of a grayish color. They contained the bones and fur of mice and shrews, the skulls being in the largest pellets invariably There were 30 of these skulls, 24 being those of the white-footed mouse (*Peromyscus leucopus*) and the remaining six those of the short-tailed shrew (*Blarina brevicauda*). None of the skulls were perfect as is the case with skulls found in pellets of the larger Owls. I was surprised at not finding any meadow mice skulls in the pellets. From this it would seem that the Saw-whet Owl is a woodland feeder.

This is the only spring record of the occurrence of the Saw-whet Owl I have been able to find for this vicinity. Fowler (Cassinia, 1916, p. 11) mentions "a wing found in the woods near the Upper Rhawn street bridge, March 12, 1911"—perhaps in the same woods where I saw my bird.—RICHARD F. MILLER, *Philadelphia, Pa.*

An Owl's Egg in the Nest of a Western Red-tailed Hawk.—On March 29, 1922, while motoring along the Mesa just north of the Santa Catalina mountains, some thirty miles from Tucson, Arizona, I chanced to see a Western Red-tail's nest, built about fifteen feet up in a mesquite tree, beside a dry wash, a couple of hundred yards from the road. The old bird, which was sitting on the nest, was only started therefrom with some difficulty, and flew circling and screaming overhead. On investigation, the nest was found to contain three Hawk's eggs and one of an Owl, presumably a Western Horned Owl, judging from its size and the fact that these owls are common hereabouts. Of the Hawk's eggs, one had been dented on some previous occasion, presumably by the claw of the parent bird, and was addled, and the other two were pretty hard set; while the Owl's egg was much fresher, laid I should say at least a week after those of the Hawk.—FREDERIC H. KENNARD, *Newton Centre, Mass.*

First Definite Capture in North America of the Manx Shearwater (Puffinus puffinus).—Mr. Henry Thurston presented to me a specimen found dead on the beach at Fire Island, N. Y., August 30, 1917. It was a mere wreck of bones and feathers but quite identifiable. It is No. 52901 in my collection; chord of wing measures 212 + mm., (broken); tail 73, tarsus 42, middle toe 39, its claw 6; chord of culmen (posterior margin of nostril to tip of bill) 27. The upper parts are sooty black, lower parts white, including axillars and under tail-coverts.

This European species heretofore has only been seen off the North American coast on the fishing banks, and even the two records for Greenland appear to be open to some doubt. The bird recorded by Reinhardt and once in the Copenhagen Museum has been lost, and an albino specimen in Benzon's collection proved to be *Fulmarus glacialis*.

The only element of doubt in the present record is the distance that the specimen may have drifted and possibly such stranded waifs should not be recorded at all.—JONATHAN DWIGHT, *New York.*

The Eastern Kingbird in Western Washington.—While it is well known that the Eastern Kingbird (*Tyrannus tyrannus*) is a common migrant and summer visitant in the Upper Sonoran and in the Lower Transition Zones of eastern Washington, it is not so well known, apparently, that it occurs sparingly and locally as a migrant and summer visitant in the Humid Transiton Zone of the western part of the State and even reaches the shores of the Pacific Ocean. It has been reported from Kalama, Cowlitz County, on the south (Johns, MS); to Bellingham, Whatcom County, on the north (Edson, Auk, Vol. XXV, 1908, p. 434); and it is known to occur from Seattle (Brown, MS; Rathbun, Auk, Vol. XIX, 1902, p. 135), Tacoma (Bowles, Auk, Vol. XXIII, 1906, p. 144), and the Nisqually Plains (Suckley, Pacific Railroad Reports, Vol. XII, Book II, Pt. 3, 1860, p. 168), west to Dungeness, Challam County (Cantwell, MS), Quillayute Prairie, Clallam County (Taylor, MS), and La Push, Clallam County (Young, MS). Bowles and Rathbun regard the species as a rare summer visitant in the vicinity of Tacoma and Seattle, respectively, and

there are at least two authentic published notes on its nesting in western Washington. Rathbun (Auk, Vol. XIX, 1902, p. 135) found a nest at Seattle on June 14, 1893, and Suckley (l.c.) obtained a nest with young nearly fledged on the Nisqually Plains August 5, 1853. (Cantwell MS) reports two pairs breeding at Dungeness on June 2 and 3, 1916, but does not specify whether he actually found nests.—WALTER P. TAYLOR, *U. S. Biological Survey, La Jolla, California.*

Prairie Horned Lark (Otocoris alpestris praticola) in Maryland in Summer.—Under this title it is stated under General Notes in 'The Auk' for October, 1922, that three specimens of the above named bird were the first ones to be recorded for Maryland in summer. The undersigned has taken this race summer and winter in Allegany and Garrett Counties, Maryland since about 1900, and recorded them as breeders as early as 1904, (Auk, Vol. XXI, p. 238; Vol. XXXVII, p. 555). And in the preface to the first named article, entitled, 'Birds of Allegany and Garrett Counties, Western Maryland,' it is said that each statement made was backed up by specimens taken. This makes it a little hard to understand how specimens taken in 1922 can be recorded as "apparently the first" specimens of that subspecies taken in summer.—C. W. G. EIFRIG, *504 Monroe Ave., Oak Park, Ill.*

Doctor Suckley on the Magpie versus Livestock.—In connection with the note by Schorger (Auk, Vol. XXXVIII, 1921, pp. 276–277) and the paper by Berry (Condor, Vol. XXIV, 1907, pp. 13–17) on the subject of attacks on sheep by the Magpie, it is of interest to observe that Dr. George Suckley, naturalist of the eastern division of the Stevens survey for a railroad route near the 47th and 49th parallels, more than 60 years ago published an observation upon depredations of this bird upon live stock, in this case horses and mules. In Suckley's portion of the account of the Magpie in the 'Report upon the Birds Collected on the Survey' (Pacific Railroad Reports, Vol. XII, Book II, Pt. 3, 1860, pp. 213–214) he writes: "This bird is mischievous and gluttonous, but not so tame or so fond of the society of man as the European species. They are very much disliked by the frontier traders and mountain men of interior Oregon on account of their vile propensity to alight on the sore backs of broken down and chafed horses or mules, most unceremoniously picking and feeding upon the raw, sore flesh, notwithstanding the moans, kicks, and rolling of the poor tortured animals. In this manner many disabled beasts have been most irretrievably injured, and probably a vast number even killed. It is said that the mountain men and trappers of former times so hated this bird, on account of its evil propensity for horse flesh, that when one of them possessed but two bullets he was sure to fire *one* at a magpie if he had an opportunity."—WALTER P. TAYLOR, *U. S. Biological Survey, La Jolla, California.*

Raven at Elizabeth, N. J.—A Withdrawal.—In 'The Auk,' Vol. XXXVIII, p. 121, the writer reported the occurrence of two Ravens (*Corvus corax principalis*) on an "island" on the local salt marshes on May 31, 1919. This record was based on an observation which is described as follows in my notes of the above date: "On May 31 [1919] on Great Island, Newark meadows, I saw two Ravens, the first I have seen in New Jersey. I first saw them sitting in a dead tree, quite close by, and was struck by their large size. I thought they were big Crows at first, for at times a Crow attains unusual size, and some appear very large under certain atmospheric conditions. But these were too big even for big Crows. There was no Crow to compare them with but as they flew off they passed a Sparrow Hawk which was hovering nearby, and the Hawk looked like a midget. The Ravens appeared to me fully as large as a Fish Hawk and their long bills were noticeable."

I still have a clear mental picture of the comparison of those two big Crow-like birds and the Sparrow Hawk, and the relative sizes then noted have never been approached in the many comparisons I have made since in the field between Crow and Sparrow Hawk. However, in discussing this record with ornithologists of American Museum of Natural History, I find a general hesitancy to accept it as scientifically established in view of the extreme rareness of the Raven in this region, the unusual date for such a record and my failure to distinguish the shape of the feathers on the throat and the wedge shape of the tail, or to hear the characteristic call. In view of this uncertainty I consider it best to withdraw the record as positively established, regardless of any confidence I may have as to its accuracy.—CHARLES A. URNER, *Elizabeth, N. J.*

Cowbird-like Behavior of Red-winged Blackbird.—Two instances of unusual procedure and Cowbird-like behavior on the part of probably the same, female Red-winged Blackbird (*Agelaius phoeniceus phoeniceus*) were noted during the 1922 nesting season. A nest of Bell's Vireo (*Vireo belli belli*) in a hazel thicket held one egg of the rightful owners on June 9. On the twelfth there were two Vireo eggs and two others, one of a Cowbird (*Molothrus ater ater*) and one which was attributed to a Red-winged Blackbird. The eggs of the interlopers were removed but an examination of the nest on the fifteenth found it empty and deserted. About twenty pairs of Red-wings constituted a near-by colony nesting throughout a strip of hazel brush that bordered on a lake, several nests with eggs being within a few rods of the Vireo nest and the selection of that very small structure in which to deposit a chance egg seemed merely an incident. But on June 16, some two or three hundred yards distant and across one end of the lake where there were no Red-wings nesting, was found another Bell's Vireo nest containing two Cowbird eggs and one of the Red-wing. The Vireos scolded at the intrusion as the alien eggs were removed but they failed to later use the nest. The Red-wing eggs are remarkably similar in detail and it would appear that they were deposited by the same bird.

The three Cowbird eggs, moreover, are enough alike to be accredited to one female. Assuming this, and bearing in mind the close relationship, could it have been that the Red-wing, possibly accompanying the Cowbird while on her egg-laying rounds, became a subject to suggestion?—HAROLD M. HOLLAND, *Galesburg, Ill.*

The Glossy Cowbird (Molothrus atronitens) in Barbados.—During a few months investigation of the birds of this island, in the winter of 1921–22, I became convinced that several new species had been introduced and had become breeding residents since Feilden (Birds of Barbados, *Ibis*, p. 447, 1880), Cory (Birds of the West Indies, Auk, 1886–1889) and other authors (about the same time), wrote on this subject. I propose to say something, later, in more extended 'Notes on the Resident Birds of Barbados'; meantime I wish to report briefly on one of these recent immigrants not listed by any of the writers above mentioned. I refer to *Molothrus atronitens*.

Shortly after my arrival in Barbados and while watching a large feeding flock of the only "Blackbird" known to Feilden, *Holoquiscalus fortirostris* (Lawr.), I saw, also feeding in the same meadow, an allied but different species of Blackbird. They were smaller, and showed distinct variations in plumage. Above all, they had no traces of yellow about their eyes. In looking through Dawson's 'Hand-List of the Birds of British Guiana,' 1916, it struck me that the Rice Bird (Lazy Bird as the natives style it) closely resembled my new acquaintance, and I finally felt sure that the Guiana species, with which I was familiar, was closely allied to, if not identical with the bird I then saw in Barbados. After interviewing such local naturalists and others most likely to give me reliable and definite information about the stranger, I concluded that this species, the nearest limits of whose range had hitherto been set down as the island of Carriacou, some 200 from Barbados, had first been seen on the latter island some ten years before. My most effective aid in establishing the fact of this introduction, as well as in proving the dispersal of the species throughout the island, was Mr. H. P. Bascom of Bridgetown. At my request he has written me the following notes, with which my own observations and investigations agree:—"I first noticed the strange Blackbirds in 1916, when only a few could be seen on the South East of the Island—above the Marine Hotel and in that section. There they did not multiply to any great extent, but later they invaded the yards of the Sugar Plantations in search of food, around the feeding troughs of horses and mules; and soon thereafter they began to increase. At present they may be seen singly, in pairs or in flocks of from about 50 to 150; and they have found their way into the stores in the busiest streets of the town. Entering through even the barred windows at the back of these stores, they clean up all the stray grains of corn, oats, rice, etc., and they can daily be seen perched in the rafters whistling and apparently quite at home. These birds are often seen on lawns and pastures, and are very fond of oats."

"When the Cowbirds are first fledged they are all brown and the females remain brown through life. The males, on the other hand, change gradually until, in their adult state, they assume a beautiful purple-black colour. This change accounts, no doubt, for the varied colours and markings met with. There is no yellow in or about the eyes of these birds.

"Now that I know the new birds to be Cowbirds I understand and believe the reports from several people that they have seen the Yellowbird (*Dendroica capitalis*) feeding the young of these birds. I have, however, been (recently) informed of a locality on the other side of the Island where there are large numbers of nests of the Cowbird, so that the habit of laying its eggs in the nests of other birds is evidently not universal."

Of course the only certain method of settling the question of identification was to take a few male and female specimens and have them examined by a competent expert. Mr. Bascom was able to have this done for me, and herewith I append extracts from a report by Dr. A. Wetmore of the National Museum, Washington, D. C., who kindly examined two male and two female specimens taken near Bridgetown:—"The four specimens of Blackbirds from Barbados, forwarded to the U. S. National Museum by Mr. H. P. Bascom at your request, prove to be the Glossy Cowbird, *Molothrus atronitens*, a species that does not appear to have been recorded previously from Barbados. In its previously known range, *M. atronitens* is found along the northern coast district of South America—in the Guianas and Venezuela—and northward through Trinidad and Tobago to the Island of Carriacou in the Grenadines. There is an old record for the species from Viques Island in the Virgin Islands group, east of Porto Rico, but the bird is probably accidental at that point, as I did not find it there during a period of three weeks devoted to field work in that island. Brabourne and Chubb record *M. atronitens* from northern Brazil. The specimens forwarded by Mr. Bascom do not seem to differ from a small series from farther south, save that the females appear somewhat grayer than the single bird of that sex from other regions—a skin from Venezuela. The difference in this case is perhaps due to a different stage in the plumage."—Casey A. Wood, *7 West Madison St., Chicago, Ill.*

Evening Grosbeaks in Maine.—The following records by members of the Stanton Bird Club have been submitted to me and seem worthy of record. Mr. Ralph Potter states that these birds first appeared at his place at Lewiston, November 15, 1921, and remained until May 12, 1922. During the cold weather they were associated in a flock of about forty but as the weather became milder they dwindled in numbers till only half a dozen were left. He fed them sixty pounds of sunflower seed.

A similar flock came to the home of Mr. and Mrs. W. R. Stevens in Auburn later in the winter. On May 13, 1922, the last of this flock was seen. A single male was seen on May 14, and again on May 21.—Carrie Ella Miller, *Lewiston, Maine.*

The Evening Grosbeak near Washington, D.C.—The first definite record for the Evening Grosbeak in the region of Washington, was made on April 25, 1922, when Dr. A. K. Fisher, in company with Mr. E. A. Preble, and the writer, collected a female in the National Zoological Park. The flock of which this bird was a member was first observed in the park on April 21, by Mr. William Hopkins, a park employee, and was reported subsequently on April 23, by Mr. T. H. Kearney who brought the matter to attention at the Biological Survey. From April 25 the flock (containing eight or nine individuals) remained for some time in more or less the same vicinity to the delight of Washington bird-lovers, who had opportunity to view and study the birds in life almost at their pleasure. Other Grosbeaks were recorded (somewhat uncertainly) in the grounds of the Sanitarium at Takoma, Maryland, and on May 6 three were seen at Cabin John Bridge, Maryland, by Miss M. T. Cooke and others. Evening Grosbeaks had been recorded previously in this same year at Laurel, Maryland, where five were noted on April 3 and six on April 5 and 6 by Mr. George Marshall.

The specimen secured by Dr. Fisher has been preserved in the U. S. National Museum (Biological Survey collection).—ALEXANDER WETMORE, *Biological Survey, U. S. Department of Agriculture.*

The Evening Grosbeak in Wisconsin.—The Evening Grosbeak (*Hesperiphona v. vespertina*) is evidently not as uncommon in Wisconsin as it is in the east. Its appearance in the New England or the Atlantic states seems to bring forth a good deal of comment. It is a regular winter visitor in southern Wisconsin. One cannot call the bird common, but any person who spends four days a month in the field, may be reasonably sure of seeing the Evening Grosbeak during the course of a winter. I find that I have seen them every winter since that of 1917–1918, when I first began to observe, except 1920–1921, which was so mild that no winter birds seemed to be present in southern Wisconsin.

Birds were seen the last week in November 1917, the last week of January 1918, March 11 and 12, 1919, November 11 and 18, 1919, in or near Madison, Wisconsin; December 24, 1921, and January 2, 1922, near Milwaukee. The birds were always found in flocks of from eight to fourteen. By no means could one call them common, but I believe that they are more regular in their migrations than literature would lead one to believe. It must be remembered that the birds have no definite objective, such as a breeding spot to direct their migratory instinct, so that their migration would be to an area rather than a point. Consequently, it would be more difficult to locate birds that have a range of country, than a bird that always stays in close proximity to a certain point.

Of more interest than the winter records for southern Wisconsin are observations in Vilas and Iron counties, close to the northern border of the state. On July 21, 1918, and for two days thereafter I found eight Evening Grosbeaks feeding in a field of poplar and jack pine woods, on the south-

east shore of Lake Kawaga near Minoqua, Wis. Their food was half ripe choke cherries and pine seeds. The birds were, with the exception of one, dully colored. Their movements were slow and clownish. They seemed very fearless, allowing me to move within twenty feet of them, and observe them for nearly half an hour. Another flock was seen three years later, July 23 and 25, 1921, at Star Lake, Vilas County, some twenty five miles north of Minoqua. The birds flew from the shore to an island in the lake to feed among the white pines there. These birds were also in dull plumage. Actual breeding records in this state are not known so far as I can determine.—CLARENCE JUNG, *553 Prospect Ave., Milwaukee, Wisconsin.*

The Standing of the Lapland Longspur in Maine.—Forty years have passed since the Lapland Longspur (*Calcarius lapponicus lapponicus*) was included in a list[1] of birds of Portland, Maine, and its vicinity with a record of only two specimens. In the meantime the species has lost its standing as an extreme rarity[2] in Maine, but little enough has been written as to its manner of occurrence there. A few more facts bearing upon the matter may now be given, though they do not have to do with very recent dates.

I believe that the Longspur was really rare in the Portland region until 1882 at least, for Pine Point, where most examples of it have been taken or seen, was covered very thoroughly by myself during several years' collecting. Indeed, I lived in a bay man's shanty there much of the time at all seasons, and kept there a complete working outfit. Furthermore, I was literally in the field during most of the hours of daylight,—my work-table being so placed that I overlooked from it much of my collecting ground.

The specimen, recorded without full data in my list above indicated, was a crude skin which I had found in the collection of Andrew Nelson, Jr., a local Taxidermist of the time, and which was clearly of his own preparation though mislabeled as were all his skins. I still see no reason to doubt his assertion that he shot the bird near the U. S. Marine Hospital, within the present limits of Portland.

After 1882 many years passed before I visited Pine Point again in the winter season except very briefly. But during the winter of 1912–13, which was generally mild, I often went there and to Old Orchard Beach which adjoins Pine Point Beach. In the period which had elapsed since my earlier visits great changes had occurred at the Point. A quarter of a mile or more of the tip of the old Point had been washed away completely, the width of what remained had been much diminished and the lands thus freed had been distributed seaward forming new flats, bars and shallows. Nevertheless, in this territory so restricted except at low tide, I at once found Lapland Longspurs to be regular and prominent visitors.

[1] Proc. Port. Society of Natural History, Dec. 4, 1882,

[2] See especially, Norton, Journal Maine Orn. Society, Vol, VI p. 43-44 and Vol. VII, p. 79.

They occurred in small parties and as single individuals, sometimes associated with Horned Larks. They were less shy than the Larks, and they had a practice, which the Larks did not share under my observation, of retiring to protected spots amongst the grasses and weeds of the Point where, if undisturbed by myself they remained quietly for long periods as if they had sought rest and shelter. A few midwinter specimens were taken and may be found in the collection of the Portland Society of Natural History. The latest date in spring season which I have seen the species fell in 1911. On March 21 of that year I came upon a highly colored bird, apparently a male, which was feeding alone, perhaps two hundred yards from the beach, in the road leading to Pine Point railroad station. I walked within six feet of it, and, occasionally flushing it, kept it closely under my eye for several minutes.—NATHAN CLIFFORD BROWN, *Portland, Maine.*

Nelson's Sparrow in Chicago.—On May 27, 1922, I took a fine male specimen of *Passerherbulus n. nelsoni* within the city limits of Chicago, in the swamp between Hyde and Wolf Lakes, near where Dr. E. W. Nelson took the type specimen in 1873. As the sparrow migration is over by that time, and as there were two that were flushed together several times, it would seem that this species breeds there. Two of this interesting species which I had taken at Addison, DuPage County, were found in a cat-tail swamp, where there was a foot or so of water. These two were on higher ground surrounded by marsh and did not take refuge in the swamp when flushed repeatedly.—C. W. G. EIFRIG, *Oak Park, Ill.*

Leconte's Sparrow near Chicago, a Correction.—In volume XXX of 'The Auk,' page 239, I had stated that a Henslow's Sparrow taken by me on March 28, 1910, at Addison, DuPage Co., Illinois, makes the spring arrival of that species begin earlier in this region than stated in Woodruff's 'Birds of the Chicago Area.' In looking over my skins I find that this was no Henslow's Sparrow at all, but the rarer Leconte's Sparrow (*Passerherbulus lecontei*). This, however, also proves an earlier spring arrival than given by Woodruff, who gives the middle of April for it.—Henslow's Sparrow has also been taken by me at Addison, as well as in many other localities near Chicago.—C. W. G. EIFRIG, *Oak Park, Ill.*

Vermivora leucobronchialis in Venezuela.—In a small series of Venezuelan birds recently received by me from the firm of S. Briceño and Sons is a specimen of *Vermivora leucobronchialis*, secured on April 10, 1920, at "Hechicena" (as near as I can decipher the name), in the Merida region, at an altitude of 2500 meters. This skin, now number 263916 in the National Museum, is marked on the original label as a male, but judging from the colors it is in all probability a female.

As far as I can ascertain, this is the second record for this supposed hybrid south of the United States. The first notice seems to be that of a male now in the Tring Museum, secured April 8, 1895, at El Valle, in the

Andes of Merida, Venezuela, by the same collectors. (See Hellmayr, Verhandlungen Ornith. Gesellsch. Bayern, vol. 14, Dec., 1920, p. 284.) —B. H. Swales, *U. S. National Museum, Washington, D. C.*

A Third South Carolina Record for the Bay-breasted Warbler (Dendroica castanea).—I shot on October 18, 1922, in a live oak hammock within a quarter of a mile of my house a very fine adult female of the Bay-breasted Warbler in winter plumage. When I first saw it among a lot of Redstarts (*Setophaga ruticilla*) I believed it to be a Black-poll Warbler (*Dendroica striata*) and, as I had not seen one of the latter birds in autumn for many years, I collected it. Upon reaching home I at once compared it with autumnal specimens of *D. striata* taken by me on Sullivan's Island, S. C., on October 6, 1887, as well as with a bird taken in my yard on November 14, 1906, and found after critical comparison that I had at last taken an undoubted Bay-breasted Warbler, which is the first example ever taken on the coast. Mr. Leverett Mills Loomis[1] secured at Chester two specimens in nuptial plumage of *D. castanea*, one on May 14 1887, and the other on May 5, 1888.—Arthur T. Wayne, *Mount Pleasant, S. C.*

Wintering of the Yellow Palm Warbler at Prattville, Ala.—Every January or December since 1913, eight or ten Yellow Palm Warblers can be found in roadside hedges some two miles east of this place though during February and March I have failed to find them. Their regular time of spring migration is from April 10 to May 20 and the autumn flight from September 20 to October 15.—Lewis S. Golson, *Prattville, Ala.*

Grinnell's Water-Thrush in Colorado.— A single individual of this subspecies of Water-Thrush (*Seiurus noveboracensis notabilis*) was seen and studied in Washington Park, Denver, Colorado, for several days in May, 1922. It was first seen along a water course heavily lined with bushes, on May 21; the same individual (apparently) was noted in the same neighborhood for several days thereafter. Dr. W. H. Bergtold was with my son and myself when the bird was first discovered, and confirmed the diagnosis, which is a satisfaction to me, because of my relatively unfamiliar acquaintance with Water-Thrushes, and because of the rarity of the subspecies in Colorado, there being, probably, not more than ten previous records for the entire State, and but one, in the past, for Denver.—Mrs. L. K. Robinson, *1130 South Franklin St., Denver, Colo.*

Rock Wren in Minnesota.—Late in the afternoon of May 13, 1922, I saw a Rock Wren (*Salpinctes obsoletus*) on the rubble in the old Indian pipestone quarry, one-half mile north of Pipestone, and shot it for the State University Museum. Available records make no mention of Minnesota specimens, so this is perhaps the first. The bird was probably

[1]The Bay-breasted Warbler is an excessively rare bird in the South Atlantic States. Auk, VIII, 1891, 170.

brought here from the southwest by a strong, prevailing wind, though the species is a little inclined to vagrancy.—ALFRED PETERSON, *Pipestone, Minn.*

Bewick's Wren (Thryomanes bewicki bewicki) on the Coast of South Carolina.—On October 13, 1922, I flushed a Bewick's Wren near a hog pen on the planation of one of my neighbors, nine miles from Mount Pleasant. This bird flew into an impenetrable ravine of briars and supplejacks which precluded an entrance on every side, excepting one, which is a road. I walked up and down this road from the time I flushed the bird at 9.30 A. M., until 1.30 P. M., I saw it plainly at 10 o'clock, but was unable to get a shot at it, as it was in a ditch and was moving rapidly. I went home and returned to the place an hour later and remained until sunset, but did not see the bird again.

While searching a large broom grass field for Henslow's Sparrow (*Passerherbulus henslowi henslowi*) on the morning of October 28, I saw another Bewick's Wren. This bird was in a small pine tree on the side of a road and near a negro church. It flew to a ravine, where some hogs were tied out, before I could get a fair shot at it and became so wild that I could not find it although I searched the place for hours. This locality is two miles from the place where I saw the first one on October 13.

On October 16, 1907, I saw a bird of this species near my home, but failed to secure it. My friend, Mr. Herbert Ravenel Sass, however, secured a specimen on October 17, 1907, at the Navy Yard near Charleston, which is now in the Charleston Museum. (See Auk, XXXV, 1918, 486.)

Bewick's Wren must evidently be a regular though rare migrant to the coast of South Carolina.—ARTHUR T. WAYNE, *Mount Pleasant, S. C.*

Present Status of the Carolina Wren near Washington, D. C.—Since the winter of 1917-1918, when the Carolina Wren was greatly reduced in number in the Washington region,[1] this species has increased gradually until in the fall of 1921 (after four breeding seasons) it was again fairly common, though still somewhat below its normal abundance.

At Plummers Island, Maryland, on the grounds of the Washington Biologists' Field Club, the Carolina Wren was not found during the summer of 1918, but in the following year once more was established as a breeding bird. By the fall of 1921 pairs were found at short intervals in suitable spots along the banks of the Potomac near the island, and though absent in some places where they have been known were recorded in numerous favorable locations throughout the Washington region.

A sudden heavy snowfall that continued from January 27 to 29, 1922, when the snow reached the unusual depth of twenty-six inches once more proved disastrous to the bird under discussion. The heavy blanket of snow melted slowly and not until February 3 did bare ground appear. On February 5 limited areas on southern exposures were bare, and open

[1] See Auk, 1919, p. 289.

feeding grounds were once more free to the Wrens. Ten days after the storm winter conditions again were normal. On February 5 at Plummers Island in company with Dr. A. K. Fisher I saw a pair of Carolina Wrens searching through leaves and other drift lodged by last year's freshets in willows above a small channel of the river, an unusual habit as it brought the birds out in the open.

Observations during February and March show that the Carolina Wren has again decreased in this region though those that remain are somewhat greater in number than was the case in the spring of 1918. The supposition advanced in my former note that decrease in this species was due not to cold but to the heavy blanket of snow that buried the normal food supply, seems substantiated. At the present writing (April 10, 1922) there is one pair of Carolina Wrens on Plummers Island and three or four more along the Potomac within a radius of two miles, while occasional pairs have been noted in recent excursions near Mount Vernon and elsewhere in the Washington region.—ALEXANDER WETMORE, *Biological Survey, Washington, D. C.*

Thrush Killed by Red-Squirrel.—Near the Ste. Anne River in the Gaspé Peninsula on July 12, 1922, my attention was attracted by the excited *pit, pits*, of Olive-backed Thrushes. On investigation I found two of these birds flying about a Red Squirrel who sat erect on a fallen tree, holding in his fore-paws a partly eaten Thrush in the spotted juvenal plumage. The squirrel's face was smeared with blood and it was altogether a most lamentable spectacle.

The destructive character of the Red Squirrel is well known, but it seems best to record this instance of his criminality.—CHARLES W. TOWNSEND, *98 Pinckney St., Boston.*

Additional Notes on Birds of the Labrador Peninsula.—The period from June 16 to September 12, 1922, was spent by me on the southern coast of the Labrador Peninsula. The following notes are based on observations which I made during that time.

Dr. C. W. Townsend has kindly reviewed the manuscript of these notes.

1. **Alca torda.** RAZOR-BILLED AUK.—The colony of this species at Perroquet Island, Bradore, P. Q., is considerably larger than was realized in 1921; I think that this is due in part to actual increase in the size of the colony, in part to inadequate observation in 1921. On July 11, 1922, I recorded 400 Razor-billed Auks as seen by me in this colony. The actual population of the colony must be much greater than that.

The colony of this species on Bald Island, near Betchewun still exists. On July 30 I saw at that island 30 or more Razor-billed Auks, including a recently hatched young one.

2. **Sterna paradisaea.** ARCTIC TERN.—About 2000 Terns were found nesting on the Perroquet Islands of Mingan on July 26. Most of them were Common Terns (*S. hirundo*), but a number of Arctic Terns were seen and were distinguished by their darker underparts and longer tail-

feathers. Comparison of the two species was made with field-glasses (×6), while the horde of screaming birds hovered overhead. The dessicated remains of one Arctic Tern were found on one of the islands. At that date most of the nests contained eggs, but a few young were seen.

3. **Moris bassana.** GANNET.—Mr. J. L. DeVany, Dominion Bird Officer, informed me that Gannets were common throughout the summer of 1922 near the Perroquet Islands of Mingan. In that vicinity I saw about 200 Gannets on July 26, and 11 (in thick fog) on September 12. Along the Labrador coast east of that point a few Gannets were to be seen in the course of a day's sail at almost any time during the summer. Between June 2 and June 16, 1922, I sailed in a motorboat from Bonaventure Island, P. Q., to Long Point of Mingan. On this voyage Gannets were seen all along the way and were especially numerous off West Point of Anticosti. In my opinion the waters near Long Point of Mingan provide exceptionally good fishing for the Gannets and are frequented by them for that reason. The birds there are probably (at least for the most part) daily visitors from present-day breeding-places, such as Bonaventure Island, rather than representatives of the breeding colony which formerly existed on the Perroquet Islands of Mingan.

4. **Somateria dresseri.** AMERICAN EIDER.—Eider arrived on the southern coast of the Labrador Peninsula, I am informed, in large numbers in the spring of 1922. They commenced nesting operations as usual, but succeeded in raising very few broods of young. Only about 15 broods of young Eider were seen by me during the entire summer. I have no doubt that the Eider of this extensive coast decreased in numbers, rather than increased, during the breeding season of 1922. One cause for this condition of things was a notable invasion of Arctic Foxes, which appeared in the southern part of the Labrador Peninsula in April and May, 1922. I am informed that thousands of these animals were trapped before June 1, but many of them remained on the southern coast, from Piashte Bay eastward, throughout the summer, and destroyed large numbers of the Ducks' nests on all but the most isolated islands. I am also informed that they killed some adult Eider, but I did not personally see Eider which I thought had been killed by them. I consider it probable that the very rainy weather which prevailed on the southern Labrador coast in June, 1922, also interfered with successful hatching by the Eider.

After incubation is well under way many of the Eider drakes gather in flocks and proceed eastward and northward, "down" the Straits of Belle Isle. Near Shekatika on July 1 I saw a flock of two or three hundred drake Eiders in nuptial plumage. At Perroquet Island, Bradore, I noticed similar, but smaller flocks flying eastward between July 2 and July 15. Some of the Eider drakes, however, remain on the southern Labrador coast at least until after they have assumed the eclipse plumage. This plumage is well known to the human inhabitants of the region.

5. **Carpodacus purpureus purpureus.** PURPLE FINCH.—A male in song was observed at Mingan on July 25, 26, and 27.

6. **Spizella monticola monticola.** TREE SPARROW.—On the mainland near Perroquet Island, Bradore, a male of this species, singing freely, was often noted between July 2 and July 15. Two males were heard singing there on July 14. One singing Tree Sparrow was observed carefully at close range, and its distinctive markings noted, but generally the bird was not seen when its song was heard. That song, short, sweet, and clear, as it was borne from its invisible source out of the sweeping, open vastness of the green Labrador barrens, seemed one of the most delightful in my experience.

7. **Spizella passerina passerina.** CHIPPING SPARROW. In front of the Hudson's Bay Company's Post at Mingan on July 25 I saw an adult Chipping Sparrow on the ground. I watched it for about one minute at a distance of 10 or 12 feet and noted its small size, black bill, rufous cap, whitish, unspotted underparts and other characteristics. Then it flew to the roof of the Company's store and sang its usual monotonous song. A little later on the same day I saw an adult Chipping Sparrow, probably this male or its mate, feed a young Chipping Sparrow, which was able to fly, on a fence nearby. This is the first record of this species in the Labrador Peninsula. I believe that it has extended its range there from the Gaspé Peninsula, via Anticosti, as a result of the clearing of the land following settlement.

8. **Dendroica aestiva aestiva.** YELLOW WARBLER.—At the head of Bradore Bay on July 14 I saw a pair of this species in a thicket. The female was carrying food in her bill. The species is fairly common farther westward along the coast.

9. **Seiurus aurocapillus.** OVENBIRD.—While on a boat at anchor in the cove of Isla a la Proie, Mingan Islands, on June 20, I heard three different Ovenbirds singing in the woods about the cove. While on a boat at anchor in a cove on the east side of Large Island, Mingan Islands, on June 21, I heard three different Ovenbirds singing in the woods about the cove. I landed on Large Island on the latter date and saw a male Ovenbird at close range there and noted its characteristic markings.

10. **Sitta canadensis.** RED-BREASTED NUTHATCH. Two individuals of this species, two miles apart, were noted on Large Island, Mingan Islands, on June 21. One of these was observed again on June 22. A Red-breasted Nuthatch was observed on Eskimo Island, Mingan Islands, on June 27.—HARRISON F. LEWIS, *Canadian National Parks, Ottawa.*

Notes from Waukesha County, Wis.—Spizella pallida. CLAY-COLORED SPARROW. Not mentioned by Cahn[1] in county list. Two male birds heard singing in brushy fields on May 30, 1922, about three miles south of Waukesha. One was again observed in the same place on June 4 and 17. On the latter date, the bird was collected by Clarence S. Jung

[1] 'Birds of Waukesha County,' by Alvin R. Cahn, Bull. Wis. Nat. Hist. Soc. Vol. XI, No. 4, 1913.

and myself and the specimen is now in the Milwaukee Museum. A search at this time failed to reveal a nest which we felt sure must be near.

Spiza americana. DICKCISSEL.—Listed by Cahn as a "common migrant." An unusually plentiful summer resident in 1922 as well as in 1921. These birds have been more common than usual all through southern Wisconsin during the past two summers.

Lanius borealis. NORTHERN SHRIKE.—On Cahn's hypothetical list. One individual seen on December 8, 1921, near Big Bend and another within the city of Waukesha on January 5, 1922.

Vermivora pinus. BLUE-WINGED WARBLER.—Regarded as hypothetical by Cahn. Two birds, believed to be males, were observed May 3, 1922, in a small pastured woods near Waukesha. They were studied with 9 × binoculars at a short distance.

Dendroica cerulea. CERULEAN WARBLER.—Cahn listed as hypothetical. First observed on May 30, 1917, when one male was seen near Waukesha. Another male was observed by Herbert L. Stoddard, Clarence S. Jung and myself in a swamp about three miles south of Waukesha on May 14, 1922. The bird was collected by Mr. Stoddard. Another male bird was observed by me in the same swamp on the following dates: May 30, June 4, 14 and 17. On May 30 another male was seen in dry second growth woods about a mile away from the swamp, where the following observations were made later. June 11, one male in full song. On June 17, Mr. Jung and I looked through the woods carefully and located three singing males. On July 2, I worked through the woods alone and located four singing males, which seemed to be in four contiguous areas. A search during these observations failed to reveal any nests, but on August 6 a male was observed feeding an immature bird. At that time three singing males were observed, but an inopportune shower prevented further observation.

Kumlien and Hollister[1] call the bird "A rather rare species in Wisconsin" and mention one breeding record at Lake Koshkonong for June 14, 1872. Herbert L. Stoddard[2] of the Milwaukee Museum has observed and collected birds in the Baraboo Bluffs during the breeding season. I am not familiar with any other breeding records for Wisconsin.

Anthus rubescens. PIPIT.—Not given in Cahn's county list although mentioned by Kumlien and Hollister as a "common migrant." Eight individuals observed May 7, 1922, at a short distance with 9 × binoculars while bathing in a small pond near Waukesha.—S. PAUL JONES, *Waukesha Co., Wisc.*

Rare and Unusual Birds in the Chicago Area during 1922.—Almost every year, the Spring and Fall migrations bring rather unexpected birds as visitors to the Chicago area. In this respect, the year 1922 has proved no exception. A specimen of one bird, the Franklin's Gull, has been taken

[1] 'Birds of Wisconsin' by Kumlien and Hollister, Bull. Wis. Nat. Hist. Soc., Vol. 3, Nos. 1, 2 and 3.

[2] 'The Auk,' Vol. XXXIV, No. 1, Jan., 1917.

for the second time in our area and several subsequent records have been added to previous occurrences of rare birds. There follows a list of my records for unusual birds this year.

Larus franklinii. FRANKLIN'S GULL.—Until last year this western representative of the race of Black-headed Gulls had but once been reported from our area (Liter, April 21, 1882; Ridgway, Birds of North and Middle America). In fact the only other record for the State of Illinois so far as I have been able to ascertain is a record from Warsaw, Illinois, cited by Ridgway on the authority of Worthen. During the Fall of 1921 however about ten of these gulls were identified by Messrs. George P. Lewis and James D. Watson. The gulls were in a flock consisting mainly of Bonaparte's Gulls (*Larus philadelphia*) with sprinkling of Ring-billed and Herring Gulls (*Larus delawarensis;* and *argentatus*), in all numbering about 500. The birds were last noticed October 27, 1921.

This year the birds were first noticed by Mr. Lewis and the writer October 23. The flock was in exactly the same spot as last year. Of a flock comprising approximately 800 birds we were able to identify 18 individuals as *franklinii*. October 25 the writer showed the birds to several ornothologists at that time in Chicago for the purpose of attending the A.O.U. Meeting. Among these was Mr. A. C. Bent who kindly confirmed the identification. On this occasion twelve birds were counted. October 26, Dr. Frank M. Woodruff and the writer again visited the colony and were able to identify only six individuals as *franklinii*.

October 27, Dr. F. M. Woodruff, Mr. Colin C. Sanborn and the writer visited the colony for the purpose of procuring a specimen, and altho only three individuals were seen, Mr. Sanborn secured one, thus firmly establishing the record. The bird, an adult female, is now in my collection.

Although several subsequent visits were made to the colony, the birds could not be found after October 27.

Steganopus tricolor. WILSON'S PHALAROPE.—A single individual, a female in full breeding plumage, was seen May 20, 1922, by Mr. J. D. Watson and the writer. Although this species has consistently been styled as not uncommon, this is the first one I have ever seen during seven years' field work in the Calumet district, the purported breeding ground of the species.

Limnodromus griseus. DOWITCHER.—A great deal must still be done in the differentiation of the two species of Dowitchers, before satisfactory records can be established. The first Dowitcher I ever took was a female taken May 14, 1920 (Auk, Oct. 1920, p. 600). The bird was at the time identified by Mr. C. B. Cory as *scolopaceus*.

Later developments however seemed to cast considerable doubt upon the correctness of this identification.

May 20, 1922, a bird was seen but not secured, and it was not until the Fall migration, on July 22 that I had the opportunity of taking two more

specimens. At this time a flock of about twenty were noticed at Hyde Lake and two specimens were secured. The flock, gradually diminishing in numbers, stayed at Hyde Lake until about August 15. In the interim the writer took another specimen, and several were secured by Messrs. Conover and Sanborn. Now, with a series of four I determined to compare my birds with the series in the Field Museum. On examining their birds I found that they had been identified by Mr. Cory on the basis of the barring of the under parts and with more or less disregard for measurement discrimination. On measuring it was found that on the whole the bills and tarsi of the birds labeled *griseus* averaged as much or more than those marked *scolopaceus*. It would appear that the two diagnostic marks, the breast markings and the bill measurements are not at all correlated! Certainly I know this, that all my birds approach closer the measurements given by Ridgway for *griseus* than for *scolopaceus* and so I have determined to label all my specimens *griseus* until further light is cast upon the subject.

Zonotrichia querula. HARRIS'S SPARROW.—The status of Harris's Sparrow in our area presents a very interesting if a somewhat perplexing problem and one which I hope to take up in greater detail at some future time. Woodruff mentions one record of James Dunn (Auk, XII, p. 395), and the sight record of Mr. Ruthven Deane. Nelson lists the bird as a very rare visitant, and Coale has one sight record. Certainly the bird has been very rare until the last few years.

Within the last three years however at least twelve records have been reported. Mr. Stoddard has taken two at Miller, Indiana; Mr. William Lyons trapped and banded one last year, and two this year.

My attention was first called to the bird when Mr. Lewis observed three individuals September 26, 1920, and I also succeeded in finding them. Last year Mr. Lewis again found a bird September 21, 1921.

This year the bird was first reported by Mr. C. J. Hunt on September 23. Mr. Hunt found one bird in Lincoln Park. Mr. Lewis and I succeeded in finding two birds at the same place September 26, and I secured one immature male on that date. Mr. Colin C. Sanborn took one bird, a male at Beach, Illinois, also on September 26. It would seem that this bird is extending its range eastward and is becoming commoner and more regular at Chicago. What is the reason?

Icteria virens. YELLOW-BREASTED CHAT.—A rare bird in our area. One observed by Mr. Watson and the writer May 19 in Jackson Park is is my only record.—N. F. LEOPOLD, JR., *4754 Greenwood Ave., Chicago, Illinois.*

Notes from Elizabeth, N. J.—The following records are submitted as of possible general interest:

Passerculus sandwichensis savanna. SAVANNAH SPARROW.—On June 10 the writer found a Savannah Sparrow chipping vigorously on a mound of mud upon the local salt marsh. Lack of time prevented a

careful search for a nest but upon my return to the same locality on June 17 I found a pair of these birds. They evidenced great concern at my presence, the female flying at the male and making advances often seen when birds are alarmed over the safety of their young. I withdrew and watched from a distance of fifty yards. The birds were apparently feeding young in the grass. They carried insects repeatedly to two different places, one frequently singing the characteristic *chip, chip, chip, seee, ser eee.* I visited the spots but though I heard a chipping I could not locate the young in the thick cover. The adult birds were still carrying food when I again passed the spot several hours later, but when I returned the following week both had disappeared. On July 4, 23 and 28, however, I found this species on another part of the same marsh. These are my first local summer records.

Bartramia longicauda. UPLAND PLOVER.—The one compensation for the serious ornithological damage wrought in this section by the Mosquito Commission has been the appearance of the Upland Plover as a post-breeding season summer visitor on the wide expanse of dry, drained salt hay marsh with which this locality is blessed. When the uncut salt hay has been flattened and matted down by wind and storm, and when the grasshopper crop is maturing, the Uplander Plover appear. They have occurred in limited numbers for two succeeding years during August in the same general location on the marsh. Dates for 1922 range from August 2 to September 3.

Florida caerulea. LITTLE BLUE HERON.—For the third consecutive year immature Little Blue Herons have occurred near Elizabeth—nine on July 28 and two on Aug. 10, 1922.

Casmerodius egretta. AMERICAN EGRET.—Appeared here—three on August 2; five on August 9 and four on August 10, 1922.

Nyctanassa violacea. YELLOW-CROWNED NIGHT HERON—On August 16, 1922, the writer, with Ralph Friedman of Brooklyn started two Herons from a creek on the local salt marsh. The birds arose as we were crossing a mosquito dike spanning the creek, and the tide being low, they came up from below us, giving an excellent view of their outstretched wings. The first bird was an immature Black-crowned Night Heron, a very common bird locally. The second, the instant it came into view, impressed me as a stranger. Though the size and span were about as in the Black-crown, the bird carried itself differently as it rose almost vertically from the narrow creek bed. And there was a very noticeable difference in the color. I described it as a slaty blue, darker on all the dorsal surface than its companion. Mr. Friedman described it as a bluish slate. We noticed light spots in irregular rows on the outstretched wing, more conspicuous, because of the sharper contrast with the darker background color, than the similar spots on the wing of the Black-crown. The primary feathers appeared a uniform slaty blue. The birds flew off, turned, and crossed before us and we both then noted that the slaty blue bird had per-

ceptibly longer legs—that is they trailed out a little further beyond the tail. Also the bulge of the curved neck appeared rather more prominent than in the Black-crown. The two again turned, this time abruptly, and on the turn I saw a difference in bearing. We marked the spot where they lit and were able to approach very closely before they arose. We both noted again the differences in color, and while Mr. Friedman, from his position, failed to affirm the differences in length of legs and carriage of neck, the writer had a very favorable chance to compare the two birds through 8 × glasses as they flew across his path at relatively close range, one almost directly over the other. A noticeable difference in the length of the legs was again apparent, though only a very slight difference in the carriage of the neck. No striking difference was noted in the rate of wing beats, as is often seen when comparing the flight of the Black-crown and the Bittern. Neither Mr. Friedman nor I was certain of the identity of the bird until a perusal of the published descriptions and an examination of museum specimens convinced us that the stranger was an immature Yellow-crowned Night Heron.

Opportunity came to more certainly confirm this conclusion on September 3, 1922, when the writer and Mr. Friedman were again covering the same marsh. We flushed the strange bird three times from a rush-bordered creek at close range and each time immediately noted the bluish tinge to the darker upper parts, especially the primaries. Finally the bird lit in a small dead tree in and about which six immature Black-crowns were roosting. We were able to approach closely and secured a good view in fair light. The poise of the bird was different from the Black-crowns. The full length of unfeathered leg was distinctly longer than the latter and the stranger seemed to stand up higher from its perch. The extended neck appeared slightly more slender, especially the basal half, than that of the Black-crown, the bill was heavier and the legs darker. We noted the dark top and back of the head in contrast to the cheek, and the darker back. The stranger was the last to leave and was noticeably tamer than the Black-crowns.

Pluvialis dominicus GOLDEN PLOVER.—This bird is still found occasionally during the fall on the wide expanse of salt marsh here. Two birds were seen at very close range by the writer on a piece of burnt meadow September 17, 1922. They were identified by (1) the rich golden color of the lighter markings on the back and top of head; (2) absence of black axillaries under wing, well seen since the wings of both birds were repeatedly raised while they preened and fed on the ground; (3) absence of conspicuous white on the tail and rump when they were in flight; (4) more slender bill in contrast to Black-bellied Plover; and (5) repeated nervous bobbing of the head. A single bird with a broken leg was found on the same marsh October 1. I was able to approach very closely and noted the more slender bill, color, and absence of white on base of tail and outstretched wings as seen in flight. Also heard the bird call. CHARLES A. URNER, *Elizabeth, New Jersey.*

Additional Notes on the Birds of Eastern Kentucky.—September 17 to 27, 1921, was spent gathering botanical specimens in eastern Kentucky and the following additional bird records were taken, adding several new species and new stations or dates for birds noted in my article in 'The Auk,' January, 1922. Common birds noted the record of which was fully covered before are not repeated.

The weather was hot and dry in Boyd and Greenup Counties and not favorable for bird observation, but while in the hills it showered every day and a large number of birds was to be seen, my only regret being I could spare so little time from my botanical duties to identify the many flitting forms.

Coccyzus erythrophthalmus. Black-billed Cuckoo.—One Letcher Co. September 26, 1921.

Ceryle alcyon alcyon. Belted Kingfisher.—Letcher County. One on two dates in September.

Sphyrapicus varius varius. Yellow-bellied Sapsucker.—In the hills, Pike County, September 27, 1921.

Archilochus colubris. Ruby-throated Hummingbird.—Noted in September, Greenup and Letcher Counties.

Tyrannus tyrannus. Kingbird.—Letcher County, one bird September 23, 1921.

Sayornis phoebe. Phoebe.—September, Greenup and Letcher Counties.

Icterus spurius. Orchard Oriole.—Observed on my former trips in May, Clark and Madison Counties but was inadvertently left out of the notes.

Astragalinus tristis tristis. Goldfinch.—In September, Boyd and Letcher Counties.

Spizella pusilla pusilla. Field Sparrow.—Boyd and Letcher Counties, September.

Pipilo erythrophthalmus erythrophthalmus. Towhee.—Greenup and Letcher Counties in September.

Bombycilla cedorum. Cedar Waxwing.—One bird only, September 22, 1921. Johnson County.

Lanivireo solitarius solitarius. Blue-headed Vireo.—In open woods, September 20, 1921, Boyd County.

Mniotilta varia. Black and White Warbler.—September 25, 1921, Letcher County.

Dendroica caerulescens caerulescens. Black-throated Blue Warbler.—One bird. September 24 and 25, 1921.

Dendroica magnolia. Magnolia Warbler.—September 19, 1921, Boyd County and September 23, 1921, Letcher County.

Dendroica castanea. Bay-breasted Warbler.—Greenup County, September 19, Boyd County, September 20, and Johnson County, September 22, 1921. One to three birds at a time.

Dendroica striata. BLACK-POLL WARBLER.—Letcher County, September 24, 1921.

Dendroica virens.—BLACK-THROATED GREEN WARBLER.—Four birds September 20, 1921.

Geothylpis trichas trichas. MARYLAND YELLOW-THROAT.—Noted in September in Eastern Kentucky, on former trips only seen in May.

Wilsonia citrina. HOODED WARBLER.—Letcher County, September 25, 1921.

Wilsonia canadensis. CANADA WARBLER.—September 25, 1921, Letcher County.

Setophaga ruticilla. REDSTART.—Letcher County, September 25, 1921.

Mimus polyglottos polyglottos. MOCKINGBIRD.—September in Letcher County.

Toxostoma rufum. BROWN THRASHER.—September 17, Kenton County.

Thyromanes bewicki bewicki. BEWICK'S WREN.—September 25, 1921, Letcher County.

Sitta carolinensis carolinensis. WHITE-BREASTED NUTHATCH.—Boyd County, September 20, 1921.

Penthestes carolinensis carolinensis. CAROLINA CHICKADEE.—One to five birds at a time in September, Letcher and Boyd Counties.

Hylocichla mustelina. WOOD THRUSH.—September 20, 1921. Boyd County.

Hylocichla ustulata swainsoni. OLIVE-BACKED THRUSH.—September 20, Boyd County and September 25 and 26, 1921, Letcher County one to four birds.—R. E. HORSEY, *Highland Park, Reservoir Ave., Rochester, N. Y.*

Summer Shore Birds of the North Carolina Coast.—The islands in Pamlico Sound and the neighboring waters off the coast of North Carolina have long been known to ornithologists, and the following notes may have some interest as a chronological link in the history of the constantly changing ornithological aspect of our coastal islands.

From June 24 to June 29, 1922, Mr. Stanley Bright and the writer cruised about these waters and visited as many favorable localities as possible in the time at our disposal. We found the trip itself well worth while if only considered as a pleasure trip, whether "chugging" through the picturesque passages of Core Sound, and threading among the many interesting islands, or dodging the numerous squalls which infect Pamlico Sound at this season.

We made our headquarters at Ocracoke, a small village on one of the narrow beaches which separate Pamlico Sound from the Ocean. Ocracoke itself is probably one of the quaintest towns in the country, peacefully slumbering away from the whirl and bustle of the mainland. Indeed it seems more like a subtropical island than a portion of our middle coast

line. The sole means of conveyance, so far as we were able to ascertain, are gasoline launches and a few of the rangy ponies which are common to all these beaches.

Streets are conspicuous in their absence, a few well painted frame houses, setting snugly among the wind-blown live oaks, holly, and bay trees, and connected by the most picturesque grassy lanes, housing the small population. Here and there a patch of prickly pear, a well-developed Yucca, or a fig tree added a semi-tropical touch to the scene, and the voices of Mockingbirds, Prairie Warblers, Carolina Wrens, and Nonpareils were to be heard at all hours.

Perhaps the most conspicuous birds of the entire region during our stay were the Brown Pelicans, which were said to have invaded this region in unprecedented numbers during the present year. At evening long strings numbering 40 or more were frequently seen passing into the sound from Ocracoke Inlet, and every small reef or "lump" had its small flock of Pelicans standing in statuesque poses along the water's edge. Out among the fish ponds they could be seen at any time, flapping heavily over the surface, or taking their toll of the finny inmates.

The fishermen have come to regard them with a great deal of animosity from their habit of robbing their nets and claim that they lose a large percentage of their catches through Pelicans and Florida Cormorants, which were almost equally numerous during our stay. During certain tides nearly every buoy and stake had its Cormorant.

A trip to Royal Shoal Rocks on June 26, proved somewhat disappointing, as we failed to find any evidence of Royal or Cabot's Terns nesting there, as we had hoped. However, there was an abundance of Laughing Gulls, the eggs being deposited frequently on the bare sand. We also saw several well-grown young skulking among the dense bushes and grass. There were possibly 150 Gull's nests on the three small islands which constitute this group. Common Terns (probably 100 nests,) Skimmers, (about the same number,) and Least Terns (possibly 20 pairs,) constituted the bulk of the population of the islands. A few Song Sparrows, a Red-breasted Merganser and one lone Oystercatcher completed our list.

The following day we made a trip to Legged Lump, now a flat circular islet of less than 200 feet in diameter, but said to have formerly been considerably larger. Here we found a small population of perhaps 20 pairs of Common Terns, 15 pairs of Skimmers, and 8 of Least Terns. A pair of Dowitchers left the island soon after we landed.

Heavy squalls prevented a satisfactory survey of Clarke's Reef, which was certainly not over a foot above high water, and we did not wish to have the eggs chilled by the rain as would probably have happened if we extended our visit. Here we found two pairs of Royal Terns, although they had evidently not commenced to nest.

At Ocracoke inlet we found probably 15 or 20 nests of Common Terns, four of Least and two of the Gull-billed. Skimmers were also common,

but we did not locate their breeding grounds. The Wilson's Plovers were very common here, although we saw no eggs nor young.

It was the migrating Limicolae that attracted our attention particularly at this spot, an ideal one for their purpose. The tide, in rising eighteen inches or so, covers and uncovers a great sand flat of some 200 yards in depth and on this flat at low tide we found most of the shore-birds observed during our stay. Besides the resident Willet, Wilson's Plover and Oystercatcher, on June 24, our first visit, there were a pair of Black-bellied Plovers and a small flock of Semipalmated Sandpipers.

On the June 26, besides the Black-bellied Plovers of the 24th, four Hudsonian Curlews were feeding on the flats. On the 27th, following a storm, several new species appeared, namely, Dowitchers (45) Least Sandpipers (2) one lame Sanderling, and the Hudsonian Curlews had increased to 6, while the Black-bellied Plovers had added 12 more, one in full plumage, to their numbers.

These observations it seems to me, are rather interesting as confirming those made on the Virginia coast last year, (Auk, July 1922) and commented upon by J. T. Nichols. It is evident that the conditions noted at the former locality are probably not unusual on these southern islands, but that the migration of Limicolae frequently "overlap," as far as the different species are concerned.

Among the "strays" or unusual summering birds we frequently saw Red-breasted Mergansers, and on one occasion each, a Loon and a Canada Goose. The latter however may have been an escaped decoy, as these are quite common in a semi-wild state at Ocracoke. One day, in Core Sound, we saw a fine old Bald Eagle swoop down from some piling and capture a large mullet so neatly that I doubt if it wet a feather.

The country on the mainland was full of many birds which we had only too little time to study. A couple of brief stops at Marshallburg and Atlantic producing an abundance of such interesting species, to us, as the Bachman's Sparrow, Nonpareil, Boat-tailed Grackle, Prothonotary and Yellow-throated Warblers, and Blue-gray Gnatchatcher. The well-known heronry at Marshallburg is now evidently a thing of the past, as no birds have been seen there this year.

One of the curiosities encountered on the trip was a colony of Purple Martins which were nesting by the side of a lighthouse far out in Pamlico Sound.—Earl L. Poole, *Reading Public Museum.*

Some Biloxi, Mississippi Bird Notes.—The writer spent the first three weeks of February, 1918 at Biloxi, Miss., and was much interested in Mr. Julian D. Corrington's paper: 'The Winter Birds of the Biloxi, Mississippi Region,' appearing in the October 'Auk'. As I noted several species not seen by Mr. Corrington it seems advisable to place the following on record:

Larus atricilla. Laughing Gull.—Included in Corrington's list but not recorded by him. I observed two of these Gulls on Deer Island, February 13, 1918.

Cathartes aura septentrionalis. TURKEY VULTURE.—Corrington writes: "Allison reports this species as common. Strangely enough I saw not a single Turkey Vulture during my stay in Biloxi and am at a loss to account for this apparent absence of so typical a bird." Turkey Vultures were seen a number of times by the writer during his 1918 visit, three birds being observed on one occasion. However the Black Vulture was by far the commoner species.

Circus hudsonius. MARSH HAWK.—Corrington states that he found this bird only on the islands. I observed a Marsh Hawk at Ocean Springs, Miss., February 6, 1918.

Seiurus noveboracensis. (subsp.?). WATER-THRUSH.—Not included in Corrington's list. One of these birds was seen in the Biloxi Cemetery, February 9, 1918.—CHRESWELL J. HUNT, *Chicago, Illinois.*

The Type of the Genus Colymbus Linn. —There seems to be but one Linnaean genus of birds concerning which ornithologists are not in agreement. This is *Colymbus* which British authorities have used for the Loons while Americans, since the appearance of the A. O. U. 'Check-List' in 1886, have universally applied it to the Grebes.

This is one of the instances where the old method of fixing types by elimination produced different results according to who did the eliminating. With the adoption of the "subsequent designation" method by the International Commission the way seemed open for agreement and since the first designation seemed to be that of the A. O. U. Committee in the 1886 'Check-List' it seemed as if the American custom in the use of the name must prevail, especially when the 'List of British Birds' by Hartert et al adopted the name *Colymbus* for the Grebes.

However the end was not yet. It was discovered that Gray who had made an untenable designation for the genus in his 'List of the Genera of Birds' in 1840, specifying a species not in the 1758 edition of Linnaeus, had corrected his mistake in the 1855 edition of the same work and designated *Colymbus arcticus*, a Loon, and one of the species included by Linnaeus in 1758. This action apparently constituted a valid designation and fixed the name on the Loons so that our British colleagues immediately returned to their original usage.

The American Committee considered this new evidence but decided that since Gray in making his 1855 designation explicitly mentioned "Linnaeus 1735," a prebinomial edition of the 'Systema,' and a work not considered in binomial nomenclature, his designation was therefore not valid for the 1758 edition from which most of his genera date. While the writer concurred in this view at the time, a subsequent review of the whole matter has tended to change his attitude. The question at issue is really what edition of Linnaeus was Gray considering when he made his type designations? There was by no means uniformity of opinion at that time as to which edition should be considered as the beginning of zoological nomenclature, indeed most British ornithologists began with the 1766 edition. It

is perfectly clear when we read the prefaces to the 1841 and 1855 editions of Gray's 'List' that he adopted the Linnaean genera from the edition of the 'Systema' in which they first appeared as genera, namely 1735, 1744, 1756, 1758 and 1766. In the 1840 edition of his 'List' he gives no dates for the genera but in the 1855 edition he does so in almost every case, quoting the Linnaean genera from various dates given above.

We have all accepted Gray's designations in the 1840 edition for Linnaeus at 1758, if the species quoted appeared in that edition of the 'Systema,' but what authority have we for assuming that it was the 1758 edition that he had in mind any more than the 1766, 1735 or any other edition? None whatever so far as the writer can see. However, it would be foolish to reject these designations, which are universally followed, on the ground that they were based on a consideration of the 1735 edition.

Similarly it seems entirely illogical to reject designations made in the 1755 edition of Gray simply because in the interest of accuracy he here furnishes dates which he had omitted in the previous edition. He moreover realizing that in this case he was changing a previous designation, adds by way of explanation, "nec 1766," meaning obviously that if he were considering the makeup of the Linnaean genus at that date he would have taken another type. He does not say "nec 1758" and we may safely infer that this meant that the genus at this date was in the same category as at 1735.

The action of the A. O. U. Committee itself is a precedent for the interpretation of Gray's action by the British ornithologists as we can easily see by consulting the genus *Larus*, in the 1910 edition of the A. O. U. 'Check-List,' where the type is given as "*Larus canus* Linnaeus (Gray, 1855)," although Gray in listing the genus says "Linnaeus 1744," following his custom of citing the edition of Linnaeus in which the genus originated. In this case too he was changing his designation since he cited *Larus glaucus* in his 1840 'List.'

We cannot adopt one method in one case and another in the next and it seems that we would be following the dictum of wisdom and common sense if we followed our own precedent, especially when we shall thereby bring about uniformity of action throughout the ornithological world. The whole question is one of those minor ones not covered by any Code and which has to be decided arbitrarily.—WITMER STONE, *Academy Natural Sciences, Philadelphia.*

RECENT LITERATURE.

Bent's 'Life Histories of North American Petrels and Pelicans and their Allies'[1]—This constitutes the third volume of Mr. Bent's great work on the life histories of North American birds, the preceding issues covering the Auks, Grebes and Loons; and the Gulls and Terns.

In character and method of treatment it follows exactly the earlier volumes and the author maintains the standard of excellence that he established at the commencement of the work. The amount of research that he has undertaken and the accuracy and satisfactory character of his accounts can only be appreciated after continued use of his volumes and we can better understand the benefits that we are to derive from the present work by having had its predecessors at our elbow for constant reference since the time of their appearance. We are delighted to find the paper used for both text and half-tone plates of better quality and more opaque than that formerly employed which makes a book more worthy of the valuable matter that it presents. For some reason not stated the color plates of eggs which formed a prominent feature of the first and second volumes are entirely omitted. Whether these are to be omitted from the future parts we do not know but they will be greatly missed by oölogists.

Having spoken of the character of the work and the make-up of the book, for both of which we have only praise, it remains to comment on the nomenclature. Heretofore as the author states he has adhered strictly to the 1910 edition of the A. O. U. 'Check-List' but in the present volume "it seems best to adopt the names that will probably appear in the new check list, so far as they are now understood by the author."

This statement is to say the least astonishing as no member of the committee has at the present time any knowledge of what names will "probably appear" in the new list, except as regards those contained in the two supplements that have been printed, and it is hardly to be supposed that any member would suggest his own preferences as those likely to be adopted. Yet without some suggestion from the committee we are at a loss to understand how Mr. Bent can form any idea of what their action will be. He makes a number of changes without a word of explanation as to why he does so or whose action he is following. For instance, *Oceanodroma socorroensis* of the 'Check-List' appears as *O. monorhis socorroensis* but when we read the text to ascertain why the author thought that the A. O. U. Committee would make this change we find that Godman considered *socorroensis* and *monorhis* as synonymous but that the author "has not been able to examine sufficient material to warrant hazarding

[1] Life Histories of North American Petrels and Pelicans and their Allies. Order Tubinares and Order Steganopodes. By Arthur Cleveland Bent of Taunton, Massachusetts. Bulletin 121. United States National Museum 1922. pp. I–XII+1–343. pll. 1–69. For sale at the Government Printing Office. Superintendent of Documents at 80 cents per copy.

an opinion on the matter". Making a change under such circumstances seems utterly unwarranted and it is just such action that causes much of our confusion in nomenclature. So also we find *Sula leucogastra* changed to *S. leucogastris* with no word of comment although this seems to be an innovation of the author and should at least be accompanied by some explanation.

In only a very few cases does Mr. Bent give definite reasons for the changes that he makes usually contenting himself with the statement that "this name is now generally recognized." This is to be regretted since it would have been of inestimable assistance to the A. O. U. Committee to have had his reasons for every change. In some instances the use of a new name is positively misleading to the reader; *Puffinus cuneatus* for instance appears as *P. pacifica* in the heading and index but our author calls it *cuneatus* in the text and makes no reference to or explanation of the name *pacifica*.

Frankly we regret to see nomenclature dragged into a work of this kind where in our opinion it is entirely out of place, the changes confuse the average reader while the lack of explanation leaves even the expert in the dark as to why they have been made.

In running over the pages of Mr. Bent's work we are struck with the number of species whose North American status rests upon Townsend specimens alleged to have been taken off the coast of Oregon. As is well known Townsend returned by way of Cape Horn and collected specimens off the coast of Chile and at other points in the southern seas, several of these were described as from Oregon and the probability that these specimens of Tubinares came from more southern regions has always seemed to us very strong.

Every student of American birds will look forward to the appearance of Mr. Bent's succeeding volumes with the greatest interest and will agree with us, we are sure, that this work will rank as one of the most important of those which deal with the North American avifauna.—W. S.

Sachtleben on the Birds of Lithuania.[1]—This report, which constitutes the bird portion of Stechow's 'Natural History of Lithuania and Adjacent Country' is a minute study of the characters and variations exhibited by the birds inhabiting the region. The subspecies are worked out with great care and an abundance of measurements is presented based mainly upon a collection made during 1918 and many individual specimens are discussed at length under the heading of "variation."

There are also tables showing the subspecific forms of many species in six different districts extending across Europe from Russia to the British

[1] Beiträge zur Natur- und Kulturgeschichte Lithauens und angrenzender Gebiete. von E. Stechow. Vögel von Dr. H. Sachtleben. Mit. I Tafel. Abhandlungen der math.-phys. Klasse der Bayer. Akad. der Wissenschaften. Supl.-Band. I. Abhandlung. pp. 1–232. Munich 1922.

Isles. In this as well as elsewhere the symbols > and < are used between two subspecific names to indicate intermediates tending toward one or the other, but to which the author thinks it inadvisable to apply a distinctive name. This plan would seem to be much better than the quadrinomial system advocated by some European writers who desire to indicate these very slightly different forms.

A table headed by a series of colored figures of skins of Nuthatches (*Sitta europaea*) shows very graphically the extent of color variation in the several subspecies and their respective ranges.

This painstaking report is not only a contribution of importance to the ornithology of the region of which it treats but also a contribution to the study of variation.—W. S.

Schalow's Ornithology of Brandenburg.[1]—This bulky volume of 600 pages represents the results of ornithological studies carried on for more than fifty years by Dr. H. Schalow in the province of Brandenburg in which he lived.

It opens with a review of the faunistic ornithology of the region with a bibliography of some 700 titles; then follows a nominal list of the 294 species treated in the main text and another list of the same species arranged in groups according to the time of their occurrence. The text itself consists of detailed accounts of the occurrence of each species in the province with dates of migration or capture, references and quotations from previous writers and measurements of the eggs.

In conclusion there is a list of popular names and reference to certain species in folk-lore, and finally a series of biographies of the leading ornithologists of the region from the time of Frisch and Shultz.

Dr. Schalow has produced a scholarly monograph which will long stand as the authority on the ornithology of this portion of Germany as well as a monument to its author whose portrait in photogravure forms the frontispiece.—W. S.

Rowan on Bird Life at Shoal Lake, Manitoba.[2]—This is an ecological paper dealing with the birds observed at the biological station of the University of Manitoba at Indian Bay, Shoal Lake, Lake of the Woods, Manitoba, a complete list of which appeared in 'The Auk' for April 1922.

Prof. Rowan defines seven well marked faunal habitats within a mile of the station, i. e. the lake; the surrounding forest; the muskeg beyond the forest belt; several small marshes; the gravel pit; islands in the lake

[1] Beiträge zur Vögelfauna der Mark Brandenburg. Materialien zu einer Ornithologie der norddeutschen Tiefebene auf Grund eigener Beobachtungen und darauf gegründeter Studien von Herman Schalow. Mit 1 Photogravure und 13 Lichtdrucktafeln. Berlin. Deutsche Ornithologische Gesellschaft. 1919. pp. 1–601.

[2] Ecological Note on the Birds Observed at the Biological Station of the University of Manitoba. By William Rowan. Ecology, Vol. III, No. 3, July, 1922. pp. 255-260

and the scrub—and comments on the characteristic birds inhabiting each. The paper will be interesting to the ecologist and invaluable to those studying at the station.—W. S.

Bannerman's 'Birds of Southern Nigeria.'[1]—The first part of this paper was reviewed in 'The Auk' for July, 1922. The present installment completes the report and covers the families from Picidae to Phasianidae in the reverse order of Sharpe's 'Hand-List,' with a short supplement to the Passeres. There are apparently no new forms proposed in this part. We congratulate the author upon the completion of what will prove an important work of reference to the student of African birds. In a prefatory note the author explains that the paper is based mainly upon the collections of Mr. Willoughby Lowe at Lagos and Mr. Kemp at several localities, as well as some smaller collections made by others. He has not attempted to list all of the species recorded from within the boundaries of Southern Nigeria as formerly laid down, and states that the species enumerated are "only a tithe of the birds which inhabit that country."—W. S.

Bannerman on African Cuckoos.[2]—Mr. Bannerman presents a lengthy discussion of the much involved nomenclature of the Emerald and Golden Cuckoos of Africa and confirms Mr. Claude Grant's findings as to their specific names. He places them in different genera however so that the correct names, following his views, will be *Chrysococcyx cupreus* (Shaw) for the yellow-bellied, Emerald, and *Lampromorpha caprius* (Bodd.) for the white-bellied, Golden Cuckoo.

With the latter he associates *L. klassi* (Steph.) and *L. flavigularis* (Shelley) while he recognizes three geographical races of the Emerald Cuckoo.

The problem here discussed is one of those perplexing nomenclatural tangles which can only be settled by adhering strictly to the rules no matter what changes in current usage ensue. So far as we can see from the evidence, Mr. Bannerman's views should be followed.—W. S.

Aves for 1920.[3]—Ornithologists of the world are once more indebted to Mr. W. L. Sclater for compiling the invaluable list of papers and descriptions of new species which constitute the 'Aves' of the 'Zoological Record' for 1920, which has just appeared.

The bird titles this year number 832 and the treatment follows the usual plan; first, a list of the papers by authors; second, a subject index

[1] The Birds of Southern Nigeria. By David A. Bannerman with notes on the Topography of the Country. By Robin Kemp and Willoughby P. Lowe. Revue Zoologique Africanne. Vol. X, Fasc. 2. 1922.

[2] On the Emerald and Golden Cuckoos of Africa. By David A. Bannerman. Novitates Zoolgicae. Vol. XXIX, pp. 413–420, October, 1922.

[3] Zoological Record. Vol. LVII, 1920. Aves. By W. L. Sclater, August, 1922, pp. 1–66. Price 6 shillings. Printed for the Zoological Society of London, old at their house in Regents Park, London, N. W. S.

by topic and country; and third, a systematic index by orders and families. We cannot too strongly endorse the importance of this work and the duty of ornithologists to subscribe for it, while every research institution in the country and every library should have the 'Zoological Record' complete. Should this work be allowed to lapse for lack of financial support systematic zoology would be thrown into a state of chaos which it would take years to straighten out. No one would know what was being done in his branch of science in other countries, research would be needlessly duplicated, identical names would be employed for different species and other complications would follow.—W. S.

Forbush on Some Under-water Activities of Waterfowl.[1]—This paper consists of a rather lengthy compilation of observations by a large number of persons as to whether the wings are used by diving birds in travelling under the water. The birds considered are Grebes, Loons, Cormorants and Water Turkeys. The testimony is directly contradictory in the case of nearly every species, some observers asserting that the wings are used while others have never seen them in action. The author very rightly contends that it is not justifiable to make a positive statement that a bird does *not* do a certain thing because we have not been able to see it done, and the evidence presented here certainly shows that the birds sometimes use their wings and sometimes do not.

The unfortunate part of such compilations is that all evidence is given the same weight while unquestionably some observers are more reliable than others and the testimony of some is valueless. The impossibility of separating the data on any such basis is as obviously impossible, so we are forced to read the evidence and draw our own conclusions. One point that does not seem to be mentioned is the physical question of the possibility of "flight" under water. The conditions surrounding flight through a medium such as air and through a much heavier medium such as water are quite different and the possibility of the return of the wing after the stroke in the heavier medium is worthy of serious consideration as also the availibility of the flight feathers for propulsion after they have been thoroughly saturated, as they would be if the wing were opened under water. These matters would seem to deserve consideration in a scientific treatment of the subject. Considerable testimony is also presented on the question whether "diving birds commit suicide," i. e., the alleged habit of ducks, etc., when wounded of clinging to plants at the bottom of bodies of water and drowning.—W. S.

---

[1]Some Under-water Activities of Certain Waterfowl. By Edward Howe Forbush, Dept. Bull. No. 8, Mass. Dept. Agr. February, 1922, pp. 1–49, numerous text figures.

Forbush's Annual Report on Massachusetts Ornithology.[1]—Mr. Furbush's report for 1921 is quite varied in its contents but three sections which stand out most conspicuously deal with the method by which the young of the Wood Duck escape from their nest to the ground; the present status of the gull and tern colonies on the Massachusetts coast and a monthly summary of migration and distribution for the year.

The report on the gull and tern colonies is discouraging and seems to indicate pretty clearly that the only hope for these birds lies in the establishment of breeding sanctuaries under competent protection. The Heath Hens on Martha's Vineyard we are glad to know are apparently holding their own.

The investigation of the Wood Duck problem is carried on in the same manner as that on the diving activities of water fowl above reviewed and with the same result i. e. that the testimony is contradictory and on the ground that it is all reliable we must conclude that the birds sometimes drop out of the nest and are sometimes carried by their parents in several different ways. On general principals it would seem to the reviewer that this is hardly likely. Birds usually have the same way of doing an important act of this sort and there is no attempt to distinguish between reliable observations and those which are decidedly open to question. In almost every court trial diametrically opposite evidence is presented; one side being right and the other wrong, and it is difficult to see why the same thing cannot be true in evidence of the kind presented in this report. If Mr. Forbush had selected the personal observations of men of scientific training who knew at the time of observation the importance of the problem and eliminated everything else the result would to our mind have been of more importance.

With regard to the migration record we are astonished that such a report should be seriously presented by a state ornithologist. We know from personal experience what a large proportion of the records submitted by a miscellaneous lot of observers has to be ignored in preparing a record of scientific value, but from the records submitted to Mr. Forbush apparently nothing has been omitted, with the result that the report must needs be wholly ignored in making any compilation for future lists etc. When such birds as Western Tanager, Arkansas Kingbird, Black-headed Grosbeak and Snowy Heron are recorded from Massachusetts with no mention of the locality or observer and only a general mention of the date, and six records of the Blue Grosbeak from Maine and Massachusetts and a flight of Blue Gray Gnatcatchers from New Jersey to Canada are mentioned with no details we can hardly believe that the compiler expects that this portion of his report is to be taken seriously. Just as soon as we begin to

[1] The Commonwealth of Massachusetts, Department of Agriculture. Annual Report of the Division of Ornithology for the year 1921. By Edward Howe Forbush, Director. Boston, 1922. Reprint of a part of the annual Report of the Dept. of Agriculture for the year ending Nov. 30, 1921. pp. 1–41, three plates.

collect sight records from a large number of people with whose "personal equation" we are not familiar, we are forced to the alternative of hurting their feelings by ignoring improbable records not properly substantiated or of pleasing them by printing their records and thereby rendering our publication untrustworthy from the scientific standpoint. We have tried to discourage the publication of doubtful records and must admit that the task is a hard one and that the pages of 'The Auk' are not blameless but we always insist upon full data and the name of the responsible person. In view of all that has been said and written of late on the greater need of care and forbearance in the publication of unusual sight records it is discouraging to find such careless work in such high places.—W. S.

Witherby's Handbook of British Birds.[1]—A double number of this important book, which is rapidly approaching completion, is before us, covering the Grebes, Loons, Doves, Sand Grouse and most of the Limicolae. The general plan and character of the work has been fully discussed in the reviews of the earlier parts and it only remains to say that the present installment is fully up to the standard of its predecessors. There are two half-tone plates of the downy young of various species and numerous text figures of bills, heads, wings etc.

Following the English custom the name *Podiceps* is used for the Grebes and *Colymbus* for the Loons following the designation of Gray 1855. (see antea p. 147.)

The generic standard is very conservative as may be seen from the fact that *Eudromias*, *Pluvialis*, *Oxyechus*, *Charadrius* and other less generally recognized genera are united under the last name while *Pelidna*, *Canutus* and *Erolia* are combined under *Calidris* the latter dating from "Anonymous" 1804 where it is based on the Knot. For the Sanderling *Crocethia* is employed, while under *Tringa* we find the species of *Actitis* and *Totanus*.—W. S.

Mathews' 'The Birds of Australia.'[2]—Volume ten of this great work begins with the genus *Sericornis* and follows with *Tasmanornis*, *Oreoscopus* and *Acanthoris*, which have been split off from the former genus as originally understood, and a beginning is made on the genus *Malurus*, comprising the beautiful Blue Wrens so characteristic of the Australian avifauna. Several subspecies are described as new: *Sericornis laevigaster tweedi* (p. 16) Tweed River; *S. magnirostris yorki* (p. 19) Cape York; *S. maculatus inopinatus* (p. 28) New South Wales; *S. m. gouldianus* (p. 28) South Australia; and *Tasmanornis humilis archibaldi* (p. 38) North Tasmania. The author's peculiar ideas on nomenclature are well illustrated on page 1 where he erects a new subgenus *Megathiza* for the bird he calls *Sericornis magnirostris keri*, in order to emphasize the fact

[1] A Practical Handbook of British Birds. Edited by H. F. Witherby. Parts XIV–XV. Vol. II, pp. 449–624. Sept. 6. 1922.

[2] The Birds of Australia. By Gregory M. Mathews. Vol. X. Part I. September 28, 1922, pp. 1–56 with six plates.

that its tarsi are scutellated while in *Sericornis* they are only obscurely scutellate, yet on account of other characters he considers *keri* only subspecifically separable from a species of *Sericornis!*

The high standard of both plates and text are well maintained in the present part.—W. S.

Recent Papers by Prof. Stephens.—In the past few years Prof. T. C. Stephens has published a number of papers of interest to ornithologists. In the proceedings of the Iowa Academy (Vol. XXVII, 1920.) is an address on the taxonomic unit, in which the familiar species and subspecies question is taken up, and a protest entered against taking the latter instead of the former as the "taxonomic unit." As in the case of many others who take this stand we fear Prof. Stephens has not had sufficient practise with systematic ornithology or like the rest of us he would find it very difficult to separate the species from the subspecies. What he is really opposed to, we think, is the multiplication of subspecies and in such a protest he will have a large following. Another paper in the same journal records winter bird records in the upper Missouri Valley during 1918–1920. 'Birds and Bird Study' is the title of a series of papers in the 'Iowa Conservationist' which contain many important Iowa records and suggestions for recording data. A paper on the birds of Union County South Dakota also appeared in the Proceedings of the Iowa Academy for 1918.—W. S.

Van Oort's 'Birds of the Netherlands.'[1]—The 15th part of Van Oort's Birds of the Netherlands contains the text of Volume I, pp. 153–250, with preface, title page and index, and ten plates of Hawks forming part of Volume II, including the Hobby, Sparrow Hawk, Gerfalcon, Duck Hawk etc. which are excellent representations, showing, as usual, the more important variations in plumage due to sex and age.

Volume I is now complete and covers the Colymbiformes, Procellariiformes, Pelecaniformes Ardeiformes and Anseriformes, illustrated by 87 plates.

Unfortunately for English and American ornithologists the text, which contains a mass of valuable information, is entirely in Dutch, which of course is necessary as the vast majority of readers will come from Holland, and the number from English speaking countries would not be sufficiently great to warrant an English edition. We congratulate both author and publisher upon the high standard of the work.—W. S.

Ribeiro's Vertebrate Fauna of Trinidad Island.[2]—The fauna of this little Brazilian Island has already been reported by Dr. Robert Cushman Murphy (Auk 1915, pp. 332-348) and the present reports list the vertebrates which he recorded and also those obtained by an expedition from the Museu Nacional at Rio Janeiro which visited the island in 1916.

[1] Ornithologia Neerlandica. De Vogels van Nederland door Dr. E. D. Van Oort. 'sGravenhage, Martinus Nijhof. Aflevering 15. November 1, 1922.

[2] Arch. do Museu Nacional, XXII, pp. 171-194, 6 pll.

This expedition obtained eight species of birds while Dr. Murphy recorded eleven and only on one the former, *Parasula dactylathra*, is additional to the Murphy list.

The author describes three new forms or color phases which are named in trinomial fashion although they are not apparently intended as geographic races. They are *Piscatrix sula autumnalis*, *Fregata minor januaria* and *F. ariel trinitatis*, the last being mentioned in a list on page 197 and not definitely associated with a description. What to do with these names we leave the nomenclatural specialist to decide.

The curious petrel, *Aestrelata chionophara* described by Murphy was not found by the Brazilian expedition.—W. S.

Murphy on Birds of the Peruvian Coast.[1]—In concluding his account of the Seacoast and Islands of Peru, Dr. Murphy in these installments writes entertainingly of the islands of Pacasmayo and Lobos de Tierra and the wonderful bird population of the latter and presents some excellent photographs depicting the colonies of Pelicans and Boobies two of the most prominent producers of the guano. In some of these the nesting birds are packed shoulder to shoulder and stretch away over the ground as far as one can see.—W. S.

McAtee on Local Suppression of Pests by Birds.[2]—This paper, a contribution to the annual report of the Smithsonian Institution, is a compilation, from various sources, of instances where birds have rendered notable service to agriculture by destroying various insect hordes which in certain localities have become a serious menace to crops. The instances are arranged according to the several groups of insects—Orthoptera, Lepidoptera etc., and the birds which figured in each are enumerated. The report forms an interesting contribution to the literature of economic ornithology.

Incidentally we are glad to see a departure from the practice usual of late in all papers by members of the Biological Survey, of ignoring the nomenclature of the A. O. U. 'Check-List' and adopting "up to the minute" names not yet authorized in any list nor in general use, and hence meaningless to the great mass of readers of agricultural reports. —W. S.

Bangs and Barbour on Birds from Darien.[3]—In this paper the authors describe a collection of birds obtained by Dr. Barbour, Messrs. W. S. Brooks, and C. F. Underwood, mainly in the Sapo Highlands and the Sambu Valley, Darien, during the spring of 1922.

---

[1] The Seacoast and Islands of Peru. By Robert Cushman Murphy. The Brooklyn Museum Quarterly. July, 1922, pp. 140–154; October, 1922, pp. 165-183.

[2] Local Suppression of Agricultural Pests of Birds. By W. L. McAtee, Biological Survey U. S. Dept. of Agriculture. From the Smithsonian Report for 1920, pp. 411–438 (with 3 plates), Publication 2637. Washington. 1922.

[3] Birds from Darien. By Outram Bangs and Thomas Barbour. Bull. Mus. Comparative Zoology, Vol. LXV. No. 6. September, 1922, pp. 191–229.

The collection, consisting of some 700 skins representing 159 species was obtained during a period of seventeen days with the aid of Indian shooters and is stated to be not fully representative, as ornithology was secondary to other activities, while the illness of Mr. Underwood, who was expected to pay particular attention to this field, prevented further prosecution of bird work. The following forms are described as new: *Jacamerops aurea penardi* (p. 200), Carrillo, Costa Rica; *Phaethornis adolphi nelsoni* (p. 204) for *P. a. fraterculus*, preoccupied; *Threnetes ruckeri dariensis* (p. 204) Mt. Sapo; *Chalybura buffoni micans* (p. 204) Mt. Sapo; *Phaenostictus macleannani chocoanus* (p. 208); *Sclerurus mexicanus anomalus* (p. 209); *Pipra erythrocephala actinosa* (p. 214); *Craspedoprion olivaceus badius* (p. 216) and *Oxyruncus brooksi* (p. 220) all from Mt. Sapo; *Chlorophanes spiza arguta* (p. 225) Divala, W. Panama. and *Tangara inornata languens* (p. 227) Loma del Leon.

In many cases comparisons are made with allied forms and there are a number of interesting field notes, the whole making a most welcome contribution to the ornithology of a region which appears to have been previously unvisited by zoologists.

While the authors lay particular stress upon the remarkable speed of the field work of the expedition, eighty-seven birds having been shot and prepared in a single day, it would seem that attention might also be called to the rapidity displayed in the preparation of the report, for while collecting was still in progress at the end of April the collection had been transported to Cambridge and the report prepared and published by September.—W. S.

Check List of the Birds of Illinois.[1]—This little pocket list of Illinois birds has been prepared by Benjamin T. Gault with the assistance of Robert Ridgway and other ornithologists in various parts of the State. The object was to produce a check-list which should contain a summary of the authenticated data relative to the occurrence of birds in the State and serve as a standard for the recording of bird notes. The result is most satisfactory and rarely have we seen so much information clearly presented in such a small space.

There is an excellent faunal map of the State showing the extent of the three primary zones—the Transition, Upper Austral and Lower Austral and the three minor subdivisions of the last, while an introduction to the list by Robert Ridgway explains the characteristic species of each. Under each species is a brief statement of its relative abundance, time of occurrence etc., with separate statements for the several districts, if its distribution is not uniform. Then by means of various signs before the name the districts in which it nests are indicated.

---

[1] **Check List of the Birds of Illinois. Together with a Short List of 200 commoner birds and Allen's Key to Bird's Nests. Published by the Illinois Audubon Society, 10 South La Salle Street, Chicago, pp. 80. 1922.**

English names only are used so that all of the complications of nomenclature which have no place in such a list are avoided.

We congratulate the Illinois Society and Mr. Gault upon an admirable piece of work which came out just in time for many of the visiting members of the A. O. U. to take copies home with them as souvenirs of the first Chicago meeting of the Union.—W. S.

Chapin on the Genus Steganura.[1]—Mr. Chapin has made a careful study of the long-tailed Paradise Whydahs examining all of the material in the principal museums of America and Europe. He comes to the conclusion that there are two perfectly distinct species, *Steganura paradisaea* and *S. aucupum* the ranges of which overlap in the region south of the Congo forest and at one or two other points. The much narrower point to the long tail feathers in *paradisaea* seems to be a constant difference as compared with the broader, rounder tip in *S. aucupum*.

Of the latter Mr. Chapin recognizes four subspecies three of which are new: *S. a. longicauda* (p. 5) Uelle District; *S. a. nilotica* (p. 5) Blue Nile, and *S. a. obtusa* (p. 6) Nyasaland.

The Whydahs are birds of the short-grass plains and abhor the rain forests. Mr. Chapin suggests that originally *S. aucupum* occupied the northern, and *S. paradisaea* the southern, grass-lands, separated by the forests which then reached to the eastern coast. With the reduction of the eastern portion of the forest the two forms spread; the northern occupying isolated areas suited to its needs has been differentiated into several races through isolation, while the southern, which has maintained a continuous distribution, has not. His theory seems to be supported by the facts which he presents.—W. S.

Chapman on the Bird Department of the American Museum.[2]—This paper contributed to the Museum's magazine 'Natural History' is an interesting historical sketch of the department with which Dr. Chapman, at present its head, has been associated almost since its inception, while most of its activities have been carried on on lines which he has laid down.

We learn that the study collection now consists of 200,000 specimens while no less than sixty-three expeditions have gone out under the museum's auspices partly or wholly in the interests of the department of birds. Beside the historical portion of the article there is an excellent outline of the objects of a department of birds and the uses of exhibition and research collections.—W. S.

---

[1] The Speiecs and Geographic Races of Steganura By James P. Chapin American Museum Novitates No. 43 September 6, 1922.

[2] The Department of Birds, American Museum. Its History and Aims. By Frank M. Chapman. Reprinted from Natural History, Vol. XXII, No. 4, pp 306–318, 1922.

McGregor on New or Noteworthy Philippine Birds.[1]—This is the fourth contribution under this title which Mr. McGregor has published. Like its predecessors it consists of records of occurrence and other notes on various species of birds from the Philippine group. The introduction into Luzon of *Francolinus pintadeanus*, the Chinese Francolin, is recorded, which if it will thrive in the islands will be a valuable addition to the fauna in the opinion of the author as there are but few upland game birds in the Philippines. Five additional records of the Monkey-eating Eagle are recorded and measurements of some of them are given. The Swift *Chaetura picina* originally described by Tweedale in 1878, and taken but twice since, is again recorded, one having been obtained by Mr. E. H. Taylor in Mindanao, in September 1920, and another by Mr. A. Celestino on Cebu, in December of the same year.

Another interesting record given by Mr. McGregor is a species of *Erythrura* of which ten specimens were found dead under a wire at Los Baños, Luzon. They were too much decomposed to skin and the single female preserved in alcohol cannot be identified as to species although it seems to represent a new form. There are photographs of the Francolin, of *Pseudoptynx philippensis* and *Spizaetus limnaetus* and a colored plate of *Malindangia mcgregori* known only from the specimens obtained by Mearns in 1906, on Mt. Malindang, Mindanao.—W. S.

Wetmore on Bird Remains from Haiti.[2]—In this short report Dr. Wetmore describes a collection of bird bones from two caves in Haiti obtained by Messrs. J. S. Brown and W. S. Burbank. The species represented are *Chamaepelia passerina*, *Crotophaga ani*, *Tolmarchus gabbi* and a hitherto undescribed Barn Owl which he names *Tyto ostologa*.—W. S.

Oberholser on Timaline Birds from the East Indies.[3]—This paper consists of a description of a new genus *Alcippornis* (p. 1) established for the group now known as *Alcippe*, this latter name belonging to *Horizillas* Oberh. (olim *Malacopteron*), the type being *A. cinera* Blyth; and descriptions of seventeen new races of Timaline birds as follows, most of them collected by or for Dr. W. L. Abbott, to whose researches in the Malay region science is indebted for so many interesting discoveries: *Alcippornis brunneicauda eriphaea* (p. 2) Borneo; *Mixornis gularis chersonesophila* (p. 3) Lower Siam; *M. g. archipelagica* (p. 4) Domel Island, Mergui Archipelago; *M. g. inveterata* (p. 5) Koh Kut Island, Siam; *M. g. versuricola* (p. 5) Southern Annam; *M. bornensis ruficoma* (p. 6) Banka Island;

[1] New or Noteworthy Philippine Birds, IV. By Richard C. McGregor. Philippine Journal of Science, Vol. 19, No. 6, December, 1921, pp. 691–703, pll. 1–4.

[2] Remains of Birds from Caves in the Republic of Haiti. By Alexander Wetmore. Smithsonian Miscellaneous Collections, Vol. 74, No. 4, October 17, 1922, pp. 1–4.

[3] New Timaline Birds from the East Indies. By Harry C. Oberholser. Smithsonian Miscellaneous Collections, Vol. 74, No. 2. September 27, 1922. pp. 1-13,

M. b. pontia (p. 6) Pulo Laut, off Borneo; *Stachyris nigriceps dipora* (p. 7) Nepal; *Cyanoderma erythroptera eripella* (p. 7) N. E. Sumatra; *C. e. apega* (p. 8) Banka Island; *Anuropsis malaccensis drymodrama* (p. 9) Malay Peninsula; *A. m. driophila* (p. 9) Lower Siam; *A. m. docima* (p. 10) Banka Island; *Drymocataphus nigrocapitatus nyctilampis* (p. 10) Banka Island; *Malacocincla abbotti eritora* (p. 11) Billiton Island; *Aethostoma rostrata aethalea* (p. 12) Eastern Sumatra; and *A. r. paganica* (p. 12) Upper Siak River, eastern Sumatra. The new forms are well and adequately described and compared with allied races.—W. S.

Economic Ornithology in Recent Entomological Publications.—Bird enemies of a few important insect pests have recently been discussed in entomological bulletins which are here briefly noticed.

Pale western cutworm (*Porosagrotis orthogonia*).—This species is a very injurious one having destroyed more than 30,000 acres of grain in Alberta in one year, and in the last five years done damage in southern Canada amounting to several million dollars. It is said to have caused a loss of $3,000,000 in Montana in a single season. In the circumstances it is a pleasure to learn that birds are the most important natural enemies of the pest. The authors[1] of the article we cite on the subject say that:

"The common wild birds of the prairie are the most beneficial natural check that we have observed. The Western Grasshopper Sparrow, *Ammodramus savannarum bimaculatus* Swainson, particularly, has been watched while digging out the larvae and carrying them away to its young. In many parts of the cutworm-infested regions it has been a common sight toward the last of June to see thousands of small excavations made by the Western Grasshopper Sparrow, Horned Larks *Otocoris alpestris leucolaema* Coues, and possibly other wild birds in their search for the larvae."

Green june beetle (*Cotinis nitida*).—The adults of this species are destructive to many kinds of fruits, and the larvae to lawns, pastures, and gardens. In a comprehensive bulletin[2] relating to this pest 19 kinds of native birds are recorded as feeding upon it. The Crow Blackbird seems to be the most effective of all, with the Crow and Robin probably next in rank. Most of the records cited are from the files of the Biological Survey.

Southern corn rootworm (*Diabrotica 12-punctata*).—This species is said to be one of the leading pests of corn in the south and damages a variety of cultivated plants in other regions. Six bird enemies are mentioned in a recent Farmers' Bulletin[3] on this insect but a number of others are known. In 'The Auk' for January 1914 (Vol. 31, No. 1, p. 120) the reviewer noted that 24 species of birds were known to feed on the corn rootworm. This number has now increased to 40. The insect under considera-

[1] Parker, J. R., Strand, A. L., and Seamons, H. L., Journ. Agr. Research 22, No. 6, Nov. 5, 1921, p. 313.

[2] Chittenden, F. H. and Fink, D. E., Bul. 891, U. S. Dept. Agr., July, 1922, p. 37.

[3] Luginbill, Philip, No. 950. U. S. Dept. Agr., May, 1922, p. 7.

tion is a yellow and black, plant-feeding species, usually assumed to be specially protected. Theorists should take the present case to heart, and bear in mind that while about all that is ever adduced relative to special protection is the initial assumption, knowledge about natural enemies constantly increases. The number of known foes seems to be directly proportional to the amount of study of an organism.

Potato-beetle (*Leptinotarsa decemlineata*).—After numerous invasions of Europe which have promptly been stamped out the potato-beetle has recently become rather well established near Bordeaux, France. Every effort is being made to extirpate the species. To call the attention of the French people to the value of natural enemies of the pest, full particulars are given in a recent comprehensive treatise[1] relative to their activities in the United States. A list of 25 species of American birds from records of the Biological Survey forms an important part of this section of the report. —W. L. M.

The Predaceous Enemies of Ants.—Under this title Dr. J. Bequaert of the American Museum of Natural History discusses at length the whole range of predatory foes of ants. No group of insects has been more frequently and emphatically asserted to be specially protected from possible enemies than ants, but Dr. Bequaert concludes, as have other students of animal food habits, that "There is certainly little or no evidence to show that, as the theory is often expressed, ants are unpalatable to most insectivorous animals."

The section (pp. 297–314) of this paper devoted to birds, which particularly interests us here, is notable for presenting original data on the food habits (especially with relation to ants) of Nicaraguan birds collected by W. de W. Miller and on African species obtained by J. P. Chapin. A colored plate by L. A. Fuertes of three kinds of African birds which follow the columns of driver ants, is given the place of honor as frontispiece of the entire volume of the Bulletin.—W. L. M.

Reestablishment and Value of the Buff-backed Heron in Egypt.—As an instance of bringing back to abundance a nearly extirpated bird, and that for an economic reason, the treatment of *Ardea ibis* or Cattle Egret in Egypt is unique. The species has ornamental plumes, which although inferior to those of the true Egrets, were so tempting to plume-hunters, that the birds were reduced from a widespread and abundant resident to a single colony of about 120 pairs. At this juncture, due chiefly to the efforts of Major S. S. Flower, a law was passed granting absolute protection to the "egret." A warden was employed to guard the existing colony, headmen of villages were notified of the value and protected status of the bird, and attempts were made to establish new colonies.

---

[1] Feytaud, J., Rev. Zool. Agr. et appliquée, Numero special, Aug., 1922, 48 pp., birds pp. 15–16.

[2] Bul. Am. Mus. Nat. Hist., 45, pp. 271–331, Pls. 24–25, Oct., 1922.

In the latter direction the interesting plan was tried of maintaining birds in aviaries in the hope that the young when released would regard the locality as their home and breed there. One colony of about 10,000 birds was built up in a few years by this method. The total number of the birds in Egypt at the time of the reports[1] here reviewed was estimated at about 100,000 resulting from the original nucleus of 120 pairs during a period of 8 years of protection and encouragement. The movement for protection of the species was largely for economic reasons and we are informed that "From reports received from landowners it appears that these Cattle Egrets will in this one year, 1920, have saved to Egypt crops to the value of from two to three million pounds, which would otherwise have been destroyed by insect pests." Money estimates of the good done by birds are hard to get and it is gratifying to have this notable modern instance.—W. L. M.

The Ornithological Journals.

Bird-Lore. XXIV, No. 5. September–October, 1922.

Stories from Birdcraft Sanctuary. By Mabel Osgood Wright. II. The Rights and Wrongs of Bird-Trapping.—From the standpoint of the bird sanctuary Mrs. Wright finds the Starling a pest in spite of the Biological Survey's praise of it as a destroyer of noxious insects, she likewise sounds a timely warning against trapping birds for banding purposes by any but skilled persons who are able to watch their traps continually.

A Vireo as Hostess. By Ernest Harold Baynes.—A remarkable experience with a nesting bird.

Koo. By Florence Merriam Bailey.—A familiar biography of a Roadrunner at an Arizona camp.

The A. M. S. Robins. By O. C. Wood.—A nesting study at Denver, Colorado.

The Mating Antics of the Pacific Nighthawk. By Mabel A. Stanford.

There is an instructive paper by Dr. A. A. Allen in the school department on Young Birds their Growth and Care; while Mr. Pearson in the Audubon Bulletin considers the Herons of the United States, with a plate by Fuertes. The species treated in this installment are Snowy and Reddish Egrets and Little Blue Heron.

A photograph of more than ordinary interest is one of a young Whooping Crane taken in Saskatchewan in the summer of 1913. The species is rapidly approaching extinction.

Bird-Lore. XXIV, No. 6. November–December, 1922.

The Trailer-Blind de Luxe. By Guy A. Bailey. Account of a little house on wheels which is used as a photograph blind and can be attached to a car or wagon as a trailer. Photographs taken from the blind are used as illustrations.

---

[1] Ministry of Public Works, Egypt. Report on the Zoological Service, (1914–1918) 1920, pp. 79–86, and (1920) 1921, p. 4.

The Brown-headed Nuthatch. By Frank F. Gander. An account of the bird in Florida with illustrations from photographs.

A Prince of the House of Eagles. By Etta S. Wilson.—A Bald Eagle kept in captivity remained in the brown plumage for three years.

Valley Quail and Roadrunners. By Ernest McGaffey.—Sketches of these species in southern California.

The Baltimore Oriole is the subject for the migration and plumage articles and a colored plate by Fuertes illustrates the male, female and immature.

The Annual Report of the National Association of Aububon Societies takes up the greater part of the issue, full as usual of valuable and instructive information on bird conservation and profusely illustrated, two of the more striking pictures are one of Audubon's old home, New York City, which is threatened with destruction, and a portrait of Louis Fuertes.

The Condor. XXIV, No. 4. July–August, 1922.

With the Willow Ptarmigans. By Grace A. Hill.—Breeding north of Nome, Alaska, with photographs of old and young.

Further observations on the activities of the California Woodpecker. By W. E. Ritter.—An extremely interesting paper in continuation of one published in 'The Condor' for 1921 (pp. 3–14.) The author's previous surmise that the birds are more interested in the grubs contained in the acorns than in the acorn meats he considers has not been maintained in view of his further observations, and contrary to his previous opinion he now finds that living oaks are sometimes used as storage trees. On other points his earlier conclusions have been confirmed.

In addition he finds that the store holes are made to fit the size of the acorns where two species of oaks with different sized acorns are present. Also that the bird which digs a hole is not the bird that uses that hole for the storage of an acorn, all are hole-diggers and all are nut storers, but no bird has any particular hole or tree in which to place his nuts. Frequently a bird will deposit a nut in a hole and then take another nut out of its hole and place it in another hole. The nuts are placed in the holes butt-outward but as all acorns in Prof. Ritter's observation were taken from the trees it is obvious that somewhere the bird reversed the position of the nut in its beak, where and when he failed to determine.

The author explains that his investigations of the habits of these woodpeckers has to do with a broad study of adaptation and that he has come to the conclusion that as animals are vastly more responsive to changed conditions, that is to say more adaptive, in their activities than in the organs which preform the activities, that the activities of animals furnish a better point of attack for scientific study of adaptation than is offered by an examination of their organs.

He admits that the development of such an instinct as this acorn storing may result in absurdities such as the storing of pebbles, or the digging of countless holes that are never used, but insists that this is not an overdeveloped instinct but a badly controlled one, and that nature is always

providing the necessary remedy or control which is what we know as intelligence.

At present he concludes the adaptations connected with the acorn storing are none of them perfect and some of them very dangerously imperfect.

Fossil Birds from the Pleistocene of McKittrick, California. By Loye Miller—An account of the forms found in this new exposure of Pleistocene asphalt, comparable in nature if not in extent to the Rancho La Brea beds.

A New Sparrow from Southern California. By W. E. Clyde Todd. —*Aimophila ruficeps canescens* (p. 126) San Diego, Calif.

Status of the Crested Jays of the North-western Coast of California. By Joseph Mailliad.—As the result of a careful study of a large series of specimens Mr. Mailliard comes to the conclusion that the Coast Jay (*Cyannocitta stelleri carbonacea*) inhabits only the region about San Francisco north to Tomales Bay and south to Monterey Bay, with intergradation with the Blue-fronted Jay (*C. s. frontalis*) on the south but rather sharply defined on the north by a narrow non-coniferous belt where no crested Jays are found. North of this belt *frontalis* extends westward to the coast and then gradually approaches *stelleri* typical specimens of which are encountered in Vancouver, birds from the northern interior of California being intermediates between *frontalis* and *stelleri* with nothing to do with *carbanacea*.

The Condor. XXIV, No. 5. September-October, 1922. No. 5

The Mimetic Aspect of the Mocker's Song. By Donald R. Dickey.—A most suggestive note. A young Mockingbird taken in October and thus only a few months old, was perfectly "imitating" the notes of the Sparrow Hawk, Killdeer and Cactus Wren along with the more characteristic Mockingbird interludes. The author questions whether the "imitative" portion of the song was not "as inherent and hereditory in his breast as were the true Mockingbird phrases." He further concludes: while no claim is made that the perfection of a Mocker's so-called imitation is attained without examples to copy, the suggestion is made, however, that the basic phrases which simulate the notes of other birds may well be as intrinsic a part of his transmitted vocal ability as are those other interludes which have no analogies among other species.

Our English Nomenclature. By A. D. Dubois.—A plea for a definite system and rules to govern English names such as we have for scientific names, similar to those advanced by Mr. Taverner and others. We agree with the author that it would be well in cases where we have "Crossbill" and "White-winged Cross-bill," for instance, to add a qualifying word to the former, as "Red Crossbill" but when it comes to introducing "White-breasted" into the names of all the Nuthatches which are at present subspecies of *Sitta carolinensis* we cannot agree. Some day we may find that the three western subspecies are really specifically different from the eastern forms; then *aculeata* becomes a specific name and the other races

sub-species of it; is not this trouble enough without having to change the English names of the whole series to match. Our English names are reasonably permanent; why change them? Mr. Dubois' plan is thoroughly consistant and would do well enough if we were starting *de novo* but not when so many of our vernacular names have become so well established.

Cactus Wrens' nests in Southern Arizona. By Florence Merriam Bailey.—Another of Mrs. Bailey's interesting contributions to Arizona ornithology now appearing in various of our ornithological magazines. The detailed analysis of the botanical make-up of the nests is interesting and might well be adopted by those who write of nests and eggs.

Notes on the Summer Avifauna of Bird Island, Texas and Vicinity. By Alvin R. Cahn.—Annotated list of 68 species with numerous illustrations from photographs.

The Wilson Bulletin. XXXIV, No. 3. September, 1922.

Nesting Birds of Lake County Oregon. By A. G. Prill.—A briefly annotated list.

Some remarks on the Facial Expression of Birds. By George M. Sutton —An interesting study from the standpoint of the artist.

Birds of Greenwood Lake and Vicinity (New Jersey and New York). By Lewis S. Kohler.—This region has been worked by other ornithologists but no reference to previous publications appears. A number of the author's statements are at variance with the experience of others, while the passing over of an alleged record of the Connecticut Warbler with no corroborative data leads one to suspect that the author was unaware of the fact that there are but one or two authenticated Spring records of the species east of the Alleghanies.

Some Iowa Owl Notes. By Fred J. Pierce.—Deals mainly with Screech Owls in Iowa.

Nesting Habits of a Great Horned Owl. By O. J. Murie.—In Minnesota.

Nesting of the Sandhill Crane, Warner Valley, Oregon. By Dr. A. G. Prill.

The Oölogist. XXXIX, No. 9. September, 1922.

Birds of Marney Valley and Malheur Lake Region, Oregon. By Dr. A. G. Prill.—A list similar to that noticed above in the 'Wilson Bulletin.' The alleged nesting of the Trumpeter Swan will be interesting to those in charge of this bird reservation!

The Oölogist. XXXIX, No. 10. October, 1922.

Discovery of the Breeding of the White Ibis in South Carolina. By Alexander Sprunt, Jr.—A colony discovered in a swamp in Charleston County, in company of Arthur T. Wayne, May 20, 1922.

A Trip to the Marshes of Northwestern Iowa. By John L. Cole.

A supplement to this issue contributed by Mr. H. Severn Regar contains a sketch of the life of the late W. H. Werner with portraits and photo-

graphs of some of Mr. Werner's groups which now adorn Mr. Regar's private museum at Norristown, Pa.

A supplement to the June issue consists of an interesting paper by Dr. N. W. Jepson: 'Bird-Lore and Bird Songs' of the North American Indian.

Journal of the Museum of Comparative Oölogy. II, No. 3–4, 1922.

Besides an account of the dedication of the Hazard Memorial building which is to house the collections of the Museum, and other papers dealing with Museum activities there are the following:

Nesting of the Sierra Nevada Rosy Finch. By W. L. Dawson.—A lengthy account with many illustrations.

A Little Known American Bird. By Rev. F. C. R. Jourdain.—The Large-billed Puffin as observed by the author in Spitzbergen, in 1921.

On the Nesting of the Barnacle Goose in Spitzbergen. By A. H. Paget Wilkes.— An account of the same experience described in 'The Auk' for 1922, p. 166 by Mr. Jourdain, with the same illustration.

Haunts and Breeding Habits of the Yellow Rail. By Rev. P. B. Peabody.—Well illustrated.

Puysegur Point and Preservation Inlet, with an Account of the Birds. By R. S. Southerland.—Deals with the bird life of the southwestern corner of South Island, New Zealand.

The Ibis. (XI Series.) IV, No. 4, October, 1922.

The Birds of Sind. Part II. By C. B. Ticehurst. —A very fully annotated list.

On a Collection of Birds from Acheen, Sumatra. By R. Snouckaert van Schauburg.—List of material collected by F. C. van Heurn in 1920.

Some Cretan Birds. By H. R. Kelham.—Field notes on a number of species.

On a Collection of Birds made in the Sudan by Major S. S. Flower, O. B. E. in December 1920 and January and February 1921 and Some Remarks on "A List of the Birds of the Anglo-Egyptian Sudan." By W. L. Sclater and C. Mackworth Praed. By M. J. Nicoll.

Notes on the Mound-building Birds of Australia, with Particulars of Features peculiar to the Mallee-Fowl, *Leipoa ocellata* Gould, and a Suggestion as to their Origin. By Edward Ashby.—An extremely interesting paper. From the data presented we learn that the mounds of the Jungle Fowl (*Megapodius reinwardti*), a bird scarcely as large as a domestic fowl, measure as much as 53 feet in diameter and 167 feet in circumference while they reach a heigth of eight feet and over. Tunnels are scratched out in the mound at an angle of 45 degrees and the eggs are laid at the end, only one egg to a tunnel. The mound of the Brush Turkey (*Alectura lathami*) is similar. In each case the heat generated by the decaying vegetable matter of which the mound is composed is relied upon to hatch the eggs, the same mound being used year after year. Mr. Ashby points out that a new mound generates so much heat that it would cook the eggs and

the birds seem able to ascertain just when it is safe to deposit the eggs without endangering them. The Mallee-fowl lives in the drier parts of Australia, where the humidity is known to have decreased very much in recent time and under present conditions the mound heat is quite insufficient to hatch the eggs. The mound is shallower and made largely of sand which on clear sunny days is removed by the birds from immediately over the egg suntil they are almost exposed and filled in again before sunset so that the heat of the sun and that of the freshly warmed sand serves the purpose formerly accomplished by decaying vegetation. If the birds have learned to do this regularly on favorable days, as would seem to be the case, it indicates as, Mr. Ashby says a remarkable development of intelligence.

Hybrids of *Gennaeus* from Natural and Artificial Crosses showing Similar Pattern and Intergrading. By Mrs. Rose H. Thomas.

A Note on Acquired or Somatic Variations. By Percy R. Lowe.

Bulletin of the British Ornithologists' Club. CCLXXI. October 27, 1922.

Capt. G. H. Wilkins gives a short account of the birds observed on the Shackleton-Rowett Expedition to the Antarctic.

Mr. Bannermann describes two races of *Sarothrura pulchra* obtained respectively in the Cameroon highlands and lowlands by, Mr. G. L. Bates; *S. p. tibatiensis* (p. 5) and *S. p. batesi* (p. 7). A number of other new forms are described from Cameroon, China, Australia etc.

British Birds. XVI, No. 1. June 1922.

Habits of the Glaucous Gull as Observed on Bear Island and in the Spitzbergen Archipelago. By A. H. Paget Wilkes.

On the White-billed Northern Diver as a British Bird.—Two certain British records of *Gavia adamsi*.

British Birds. XVI, No. 2. July, 1922.

On the Habits of the Red-throated Diver in Spitzbergen. By G. J. van Oordt and J. S. Huxley.—Remarkable illustrations from photographs.

British Birds. XVI. No. 3. August, 1922.

The Migration of British Starlings: Results of the Marking Method. By A. Landsborough Thomson.—This is a real result of bird-banding, based on five years work, and as has already been pointed out results of real value so far as distribution and migration are concerned can only begin to be had by this method after several years labor. The publication of fragmentary records of birds banded, and scattered returns, are not of much scientific value, and had perhaps better remain, like most similar scientific data, in manuscript, until something definite is accomplished.

In the present paper it is demonstrated that Starlings reared in England rarely leave the island, although stragglers have reached Ireland and one crossed to France. Starlings banded in England in winter, however, have

been taken in Norway, Finland and northern Germany while Starlings banded in summer in Demnark, Sweden, northern Germany, Courlan, Livonia and western Russia have been taken in the British Isles in winter. This of course demonstrates a southwesterly migration in autumn, with a return in spring. Continental banding furthermore shows migration from northern Europe to Spain, Italy, and northern Africa.

British Birds. XVI, No. 4. September 1, 1922.

On the Nest-Building of the Little Tern. By J. N. Douglass Smith.—With interesting illustrations of several types of nests.

Preferential Mating in Birds with Similar Coloration in Both Sexes. By J. S. Huxley.—Although Louisiana Herons observed in Mr. McIlhenny's rookery showed considerable variation in intensity of coloration, in any given pair the male was apparently always brighter than the female and the palest male was mated with the palest female. Similarly among Snowy Herons four were observed with the lores orange instead of yellow and they were found to be mated as two pairs. The suggestion is made that either brother and sister had mated, or that, as the courtship of the herons is mutual, it is probable that two birds with the same level of emotional intensity (which would almost certainly carry with it the same intensity of coloration) would be likely to mate together.

This development of "strains" within the species would account for such types as the bridled form of the Common Murre, and similar forms.

British Birds. XVI, No. 5. October, 1922.

Ability of the Oystercatcher to Open Oysters and its Bearing upon the History of the Species. By J. N. Dewar.—Experiments on captive birds showed that the Oystercatcher can open oysters, attacking the edge of the shell farthest from the hinge which would be the exposed part as the shell stood in the oyster-bed. In a large part of their range, however, Oystercatchers are today unable to find oysters as these mollusks have disappeared from the northern colder waters, at least as littoral species, and there the birds are accustomed to feed on mussels in the same way. The feeding on shellfish seems to be an inherited character developed in the far distant past when the oyster was a wide spread littoral species.

British Birds. XVI, No. 6. November, 1922.

Some notes on the Icterine Warbler. By E. M. Nicholson.

The East Woodhay Warbler *Sylvia Bidehensis*. By. H. S. Gladstone.

Observations on the Birds of Lundy. By L. R. W. Loyd.

The Emu. XXII, Part 1. July, 1922.

Buff-breasted Quail *Turnix olivii*. By A. J. Campbell.—With a colored plate followed by an account of its nest and eggs by H. L. White with photographic reproductions

The Lost Paradise Parrot. By A. H. Chisholm.—The rediscovery of *Psephotus pulcherrimus*, with photographs from life of the birds and their nest in a termites' mound.

A Method of Taking a Bird Census. By J. B. Cleland.—By making actual counts for each species on each walk.

Birds of the Moree District. By F. C. Morse.—With many excellent photographs.

Egret and Glossy Ibis Rookeries. By F. C. Morse.

Bird Notes from Boree. By Mrs. S. P. W. Norton.

The Birds of Little Barrier Island, N. Z. By W. R. B. Oliver.

Notes on Sea Birds between Sidney and England. By A. S. LeSouef.

Round the Lamp. R. Stuart Sutherland.—Sea birds observed at Puysegur Light, N. Z.—With measurements of specimens and discussion of the differences between the four species of *Prion*.

Field Notes on the Black Belt Magpie *Strepera fulginosa*. [Æ. *fuliginosa*.] By Miss J. A. Fletcher.

New Sub-species of Tit Warblers. By A. G. Campbell.—Five races of *Acanthiza* and five of *Geobasileus*.

The Emu. XXII, Part 1. October, 1922.

On the Status of Several Species belonging to the two Genera, *Fregetta* Bp. and *Fregettornis* Mathews. By J. R. Kingborn and N. W. Cayley.—A careful review of characters and variation. The authors conclude that there are two species: *Fregettornis grallaria* Vieill and *Fregetta tropica* Gould the latter including *leucogaster*, *melanogaster* and *tubulata* as synonyms. An excellent plate by the junior author illustrates the species.

New Subspecies of *Acanthiza nana* Vig. and Horst. By H. L. White. *A. n. flava* (p. 97) N. Queensland.

A Collecting Trip to Cape York Peninsula. By H. L. White.—An interesting account of the expedition of Wm. McLennan to this northern point of Australia in the interests of Mr. White. The nesting of *Psephotis chrysopterygius* is described in a separate paper.

A trip to the Norther River-Scrubs of N. S. W. By E. A. D'Ombrain.

The Orange-winged Tree Runner (*Neositta chrysoptera*). By P. A. Gilbert.

Birds of Hobart. By M. S. R. Sharland and S. W. Crane.

List of birds found Breeding in and around the Swamps near Moorn, W. A., during 1921. By P. T. Sandland and O. L. E. Orton.

In the Haunt of the Gray Butcher Bird (*Cracticus torquatus*.)

Notes from Wahroonga, Sydney, N. S. W. By H. Wolstenholme.

The Austral Avian Record. V. No. 1, July 17, 1922.

Some additions and corrections to his 'List', by Mathews, adds a few new genera and sub-species, while 'Notes of Interest' contain publication dates of British Museum Publications, and notes on a number of other works and type designations of certain of Reichenbach's genera. An account of another work by Jarochi the Polish ornithologist (1819) introduces two new genera and several species. One is *Eider* for the Fider Duck ruled out by the International Committee so far as Oken is concerned

but apparently tenable here and conflicting with *Somateria* of even date. This paper and a long one on Thomas Watling, Artist, are by Mathews and Iredale. Seven Watling plates are reproduced in colors.

Volume IV, No. 8 of the 'Record' consists wholly of Index.

Ornithological Articles in Other Journals.[1]

Patch, Clyde A. A Biological Reconnaisance on Graham Island of the Queen Charlotte Group. (Canadian Field Naturalist, September, 1922.)—With annotated list of the mammals and birds. (Concluded in the October issue.)

Munro, J. A. An Invasion of Coots. (Ibid.)—Large numbers failed to go south on the advent of cold weather in February 1922, and perished on several British Columbian lakes in spite of efforts to feed them.

Lewis, Harrison F. Occurrences of the Meadowlark in Nova Scotia (Ibid.)—Fourteen records.

Evans, William. Notes on the Breeding of the Goosender and the Red-breasted Merganser in the Forth Area: A Retrospect. (Scottish Naturalist, July–August, 1922.)

Rintoul, Leonora J. and Baxter, Evelyn V. Report on Scottish Ornithology for 1921. (Concluded from May–June issue.) (Ibid.)

Ritchie, James. The Great Waxwing Invasion of 1921. (Ibid, September–October, 1922.)—The greatest invasion on record. Flights of this species to Scotland and England have occurred about every ten years since 1834–5 which is the first record available.

Gross, A. O. A Visit to Great Duck Island. (Maine Naturalist. II, no. 3–4. Nov. 25, 1922.)—On the coast of Maine.

Kilburn, Frank. Some Additional Birds Records for Aroostook and Washington Counties [Me] (Ibid.)—A number of other notes on Maine ornithology are to be found in this publication.

Allen, F. H. Some Little Known Songs of Common Birds. (Natural History, May–June, 1922. XXII, No. 3.)—Unusual songs of many species that of the Blue Jay being probably similar to one recorded in the Auk (1919, p. 111). Mr. Allen pays especial attention to the utterances of the Tyrant Flycatchers and the Swallows, groups which are usually neglected in considerations of song.

Cahn, Alvin R. The Brown Pelicans at Home. (Ibid. September–October, 1922, No. 5.)—On the Bird Islands on the Texas coast, with admirable illustrations from photographs.

Wood, Norman A. Observations on the Birds of Berrion County, Michigan. (Occasional Papers of the Museum of Zoology, Univ. of Michigan, No. 119, July 6, 1922.)—An excellent annotated list.

---

[1]Some of these journals are received in exchange, others are examined in the library of the Academy of Natural Sciences of Philadelphia. The Editor is under obligations to Mr. J. A. G. Rehn for a list of ornithological articles contained in the accessions to the library from week to week.

Shufeldt, R. W. The Little Saw-Whet Owl. (The Classmate, Cincinnati, Ohio. July 15, 1922.)—With illustrations from photographs.

Shufeldt, R. W. Our Great Rovers of the Seas High. The Albatrosses. (The Scientific Monthly, November, 1922.)

Forbush, E. H. Corvus the Crow. (American Forestry, October, 1922.)—An illustrated account of this familiar species.

Shufeldt, R. W. Wild Pigeons and Doves. (Ibid.)

Shufeldt, R. W. The Woodpeckers: Bird Friends of Our Forest. (Ibid. November, 1922)—With many illustrations mainly from mounted specimens.

Bangs, Outram and Penard, Thos. E. The Identity of *Attila flammulatus* Lafrenaye. (Prod. Biol. Soc. Washington, October 17, 1922.)

Schlupp, W. F. The Graminivorous Bird Problem. (Jour. Dept. Agric., Union of South Africa, IV, No. 5. pp. 432–446.)

Forbush, Edw. H. Bird Guardians of the Trees. (American Forestry, XXVIII, pp. 159–164, 1922.)—Beautiful illustrations from photographs by Miss Stanwood.

Rothschild, Lord. On the Names of Certain Parrots of the Genus Larius Bodd. (Ann. and Mag. Nat. Hist. series, IX, pp. 411–412, April 1922.)—*Larius* has priority over *Eclectus* and should not be emended to "*Lorius*," while the specific name *roratus* Müll. belongs to the bird of Amboina not the race to which it is usually applied.

Bingham, Harold C. Visual Perception in the Chick. (Behaviour Monographs, IV, No. 4, pp. 1–104.)—A long discussion on experiments on chicks which the author interprets as indicating a power for discrimination of size far greater than of form, while the birds exhibited a noticeable acuity for moving stimuli.

Swarth, Harry S. The Bohemian Waxwing: A Cosmopolite. (The Univ. of Calif. Chronicle, October, 1922. pp. 450–455.)—A popular and historical account of this species largely from the information presented in his account of the birds of the Stikine River District.

Hornbeck, J. W. Spring and Summer Birds of Northfield, Minn. (The American Midland Naturalist, VIII, No. 3. May, 1922.)—126 species listed with dates of arrival, etc., for the spring of 1921. In the issue for May 1921 is a similar paper on the previous season.

Stevens, O. A. The Geography of Bird Study (Ibid. No. 2.)—A discussion of the distribution of Audubon Societies and Bird Clubs. As the author is unfamiliar with the local conditions and activities of the organizations the discussion has little foundation to rest upon.

Froggatt, Walter W. The Wedge-tailed Eagle (Australian Zoologist, I. Part 8, pp. 251–254.)

LeSouef, A. S. Notes on the breeding of the Scrub Turkey. (Ibid, Part 8, p. 251.)

Hermann, G. P. Color Changes in Birds' Feathers. (Ibid. Part 4, pp. 151–153.)—A reliable discussion on the effect of food on the loss of crimson and red colors at the time of moult. Incidentally the writer con-

firms the views of practically all present day writers that change in pigment is impossible in the mature feather.

Harrison, Atholes. The Bird Life of Dublin City. (The Irish Naturalist, XXXI, No. 4, pp. 37–41.)—Eighty species recorded from the city proper.

Burkett, J. P. Birds' Song. (Ibid. No. 11, November, 1922.)—Concludes from his observations that mating checks song; that there is a decline in song after the first nesting and brooding, but that song is carried on during this period by other unmated birds; that there is a recrudescence in song after the first brood and that the longer the breeding continues the longer the song period.

Moulton, J. C. A Rail New to the Malay Peninsula. (Notes of the Straits Branch Royal Asiatic Society, 1922, pp. 213–214.)—*Porzana bicolor.*

Hartert, Ernst. Types of Birds in the Tring Museum: General Collection. (Novitates Zoologicae, XXIX, No. 2. October 1922.)—Numbers 879–1182. *Andropadus gracilis extremus* (p. 369) Sierra Leone, is described as new.

Salvadori, T. and Festa, E. Birds of Dr. Festa's Expedition in Cirenaica. (Boll. Mus. Zool ed Anat. Comp. Univ. Torino. No. 738. Vol. XXXVI. September 30, 1922.)—A briefly annotated list of 41 species. [In Italian.]

van Someren, V. G. L. Notes on the Birds of East Africa. (Novitates Zoologicae, XXIX pp. 1–248, pl. 1–VII.)—An annotated list of 1377 species and subspecies based on a collection of 15000 specimens of which 6490 are now in the Tring Museum. We are largely indebted to Dr. Hartert for preparing this voluminous paper for publication, a matter of the greatest difficulty on account of the condition in which Dr. van Someren was forced to leave it. Many new forms are indicated but not named, while others are not determined subspecifically for lack of adequate material. In spite of this however no less than 27 new forms are proposed in this paper as follows: *Centropus superciliosus intermedius* (p. 50) Mombasa; *Chrysococcyx auratus sharpei* (p. 53) South Africa; *Gymnobucco bonapartei intermedius* (p. 57) Moanga Forest; *Campothera caroli budongoensis* (p. 64) Bugoma Forest; *Halcyon leucocephala ugandae* (p. 77) Kisumu; *Tiparia cincta suahelica* (p. 90) Escarpment; *Melaenornis lugubris ugandae* (p. 93) Uganda; *Pedilorhynchus epulatus sethsmithi* (p. 96) Budongo Forest; *Smithornis rufolateralis budongoensis* (p. 99) Bugoma and Budonga Forests; *Oriolus larvatus kikuyuensis* (p. 127) Nairobi; *Hyphantornis heuglini sukensis* (p. 142) Kerio River; *Uraginthus bengalus littoralis* (p. 160) Mombasa; *Poliospiza reichenowi* (p. 169) southwest of Lake Rudolf; *Eurillas virens olochlorus* (p. 189) Sezibwa; *Pycnonotus dodsoni teitensis* (p. 190) *Zosterops yalensis* (p. 191) Kaimosi; *Z. elgonensis* (p. 191) Bukedi; *Z. massaica* (p. 192) Sagala; *Cinnyris bifasciatus tsavoensis* (p. 196) Tsavo; *Cisticola terrestris nakuruensis* (p. 207) Nakuru Plains; *C. t. mauensis* (p. 207) Mau; *C. carruthersi kavirondensis* (p. 214) Kisumu Swamp; *C.*

tiniens oreophila (p. 214) Kenia; *C. hunteri immaculata* (p. 216) *C. lateralis ugandensis* (p. 216) Uganda; *C. teitensis* (p. 217) Sagala; *Heliolais erythroptera kavirondensis* (p. 218) Kavironda. The author states that at the beginning of his studies he was very skeptical of many of the races described by the late Dr. Mearns but he later was able to corroborate his findings in almost every case.

Evans, A. H. Notes on the Life History of *Cuculus canorus*. With exhibition of eggs. (Proc. Zool. Soc. London, 1922, Part 1, pp. 197–199, April 1922.)—Shows pretty conclusively that Cuckoos do not as a rule lay in the nests of definite foster parents though they "not uncommonly" do so. He considers that the female Cuckoo does not range far from the same spot in successive seasons and is generally forced to take what she can get in the way of nests in which to lay. The eggs in the experience of the author may or may not resemble those of the foster parent. In the case of the Meadow Pipit the eggs are very similar any way to typical eggs of the Cuckoo.

Praeger, W. E. A Note on the Ecology of Herons (Ecology, I, No. 1. January 1922.)—Cutting a deep channel with perpendicular banks where formerly a shallow winding river flowed, drove away the heron population.

Miller, Robert C. The Significance of the Gregarious Habit. (Ibid. No. 2, April, 1922)—This is a study of the Bush-Tit of California. The author's conclusions are that a flock formation is advantageous to a species by affording a multitude of eyes for the perception of an enemy's approach while uniform behaviour on the part of the individuals tends to confuse an attacking foe. In feeding too the flock forms the most economical method of covering a forage range. The Bush-Tit with a strong flocking tendency is one of the most "successful" species in its range.

Taylor, Walter P. A Distributional and Ecological Study of Mount Rainier, Washington. (Ibid. III No. 3, July 1922)—Frequent mention of birds in the faunae of different zones and habitats.

Lebedinsky, N. G. A Contribution to the Morphology and Development of the Under Mandible in Birds. (Verh. Naturforsch. Gesellschaft in Basel XXXI 1920. pp. 39–112.)—An important paper contrasting the various details of structure in the several groups of birds. Profusely illustrated with text figures.

Baker, E. C. Stuart. The Game Birds of India, Burma, and Ceylon. XXXI, Genus *Alectoris*. (Jour. Bombay Nat. Hist. Soc. XXVIII No. 2. March 25, 1922.)—Genus Perdix is covered in the next issue June 30, 1922.

Baker, E. C. Stuart. Birds of the Indian Empire. Part V. (Ibid. No. 2.) Part VI, (Ibid N. B.)

Ticehurst, C. B. The Birds of Mesopotamia. Part II (Ibid. No. 2); Part III, (Ibid. No. 3.).

Omaston, B. B. Birds of Pachmarhi (Ibid.)—An annotated list.

Prater, S. H. Nest Boxes for Birds. (Ibid.)—In India. With illustrations mainly from publications of the National Association of Audubon Societies.

Field, F. Rough List and Notes on the Birds found Breeding in the Gonda District (Ibid. Part 3.)

Berlioz, M. J. Study of a Collection of Birds. Obtained at Du Bourg-de-Bozas, in Tropical Africa. (Bull. Mus. Nat. de Hist. Nat., Paris. 1922, pp. 259–266.)—A briefly annotated list. To be continued. [In French.]

Navas, P. R. Longiurs. The Birds of Spain. (Revista de la Academia de Ciencias Exactas Fisico-quiniicas y Naturales Zaragoza, V. pp. 83–84, 1921.)—This installment covers the genera *Acrocephalus* and *Hippolais*. The paper was begun in Vol. III p. 7. [In Spanish.]

Foley, Dr. H. A. A Contribution to the Study of the Saharan Fauna. (Bull. Soc. Hist. Nat. Afrique du Nord, III, pp. 70–76. 1922.)—Birds at pp. 71–74. [In French.]

Coopman, L. Nests of the Water-hen *Gallinula chloropus chloropus*. (La Nature, 1922. No. 2509. pp. 279–283.) [In French.]

Lane, A. A. Notes on the Charadriidae. (South African Journal of Nat. Hist., II., , No. 3, March, 1920.)

Godfrey, Robert. The Birds of Buffalo Basin, Cape Provence. (Ibid.) continued in II, No. 2.

Finch-Davies, Lt. C. G. Corrections and Additions to the List of the Birds of the South-western Protectorate. (Ibid.)

Hewitt, John. Notes on the Fauna of St. Croix Island. (Ibid.)

Symons, R. E. Bird Life in Drakenberg. The Black Eagle. (Ibid, No. 2.)

James, H. W. Notes on Birds of the Cradock and Tarkastad Districts, Cape. Provence, with Nesting Dates. (Ibid. III, No. 1.)

Millar, A. G. Nesting Habits of the Trumpeter Hornbill *Bycanistes buccinator*. (Ibid.)

H. G. Eaton. Some Nesting Habits of the Cape Robin, (Ibid. No. 2.)

A. H. Hamer. Territorialism and Sexual Selection. (Ibid.) The writer calls attention to the habit of the male bird of many species, which he terms "territorials," of establishing itself as master over a certain territory in which it nests. In aviaries, where it is impossible for several males to establish territories, fighting ensues until the weaker bird is killed, while in nature it would retire and establish its territory elsewhere. Fighting for fight's sake he considers very rare in nature and he regards song as a means of warning other birds that the territory is occupied and they, taking the warning, pass on rather than contest the rights of the tenant, on the ground. Going further he contends that conspicuous coloration serves the same purpose, as do also plumes and other conspicuous ornaments, in attracting the attention of other birds to the fact that an occupant is already there. In other words that these characters are developed by natural selection for this very purpose and not by the operation of "sexual selection." Non-territorials or birds breeding in close association are not brilliantly colored nor do they usually have noticeable song powers.

There hardly seems to be sufficient evidence submitted to convince one of the correctness of the latter part of the author's theory. All of this paper, the author informs us in a postscript, was written before he had seen Howard's work on 'Territory in Bird Life,' just as Mr. Mousley's paper (Auk 1921, p. 321) was entirely independent of that latter work. Thus we have three writers advancing much the same theory at almost the same moment.

Steiner, Hans. The Ontogenetic and Phylogenetic Development of the Wing Skeleton of Birds. (Acta Zoologica Stockholm, 1922, 2–3, pp. 307–360.)—A detailed discussion with illustrations and a full bibliography of the subject. [In German.]

Schouteden, H. Note on the Geographical Distribution of two Congo birds. (Revue Zool. Africa, X. fasc. I. pp. 72–76.)—*Nectarinia congensis* and *Brachycope anomala*. [In French.]

Lafond, E. J. Ornithological Observations in 1920 in the environs of Geneva. (Bull. Soc. Zool. Geneva, III, pp. 16–18.) [In Franch.]

Virchow, Hans. On the Occipital Juncture in Rhea darwini. (Setzungsb. Gesell. Natur. Freunde, Berlin. 1917, No. 3. pp. 230–232.) [In German.]

Lilienthal, Gustav. The Influence of Wing-form on the Character of Flight in Birds. (Ibid. No. 4. pp. 261–280.)—A full discussion of the subject well illustrated. [In German.]

Virchow, Hans. On the Cervical Vertebral Column in *Plotus anhinga*. (Ibid. No. 7, pp. 454–468.) [In German.]

von Lucanus, Friedrich. The Migration of European Birds from the evidence of Bird-banding. (Ibid. No. 5, pp. 167–185.) [In German.]

von Lucanus, Friedrich. The Migration of the Woodcock. (Ibid. o. 1–2, pp. 55–60.) [In German.]

Boettger, Caesar R. My Expedition to the Spanish Colony Rio de Oro in West Africa. (Bericht Seuchenb. Naturf. Gesell. 51, Heft I, pp. 18–31 and II, pp. 72–84.)—The first part consists of the itinery while the second discusses bird life. 1921. [In German.]

Lecaillon, M. A. On the Characters of a Hybrid between *Cairina moschata* and *Chenalopex*. (Compt. Rend. Acad. Sci. Paris. 1922. 174, No. I, p. 68–69.) [In French.]

Lecaillon, M. A. On the Fecundity of a Cross between a male *Dafila acuta* and a female *Anas boschas*. (Ibid. pp. 1431–1433.) [In French.] —Another paper on the Characters of this hybrid will be found at page 885–887.

Hilden, Ilmari. On the Avifauna of Different Types of Woodland. (Acta Soc. pro Fauna et Flora Fennica, XLVIII, No. 5, pp. 3–7.)—The make-up of several types of forest is described and the birds listed which are characteristic of each. The reference is of course to north Europe. [In German.]

Daguin, Fernandi. The Ornithological Fauna of the Vicinity of Chatillon-sur-Seine. (Mem. Acad. Sci. Arts et Belles-letters de Dijon,

1922, pp. 341–410, May. 1922.)—A remarkably good list very fully annotated with accounts of habits, dates of occurrence etc. [In French.]

van Someren, V. G. L. On a collection of Birds from Turkanaland. (Jour. East African and Uganda Nat. Hist. Soc., No. 16, February, 1921, pp. 3–38.)—A list of 186 species, in English, with long English names coined for each form; as for instance, for *Linura fischeri*, "Fischer's Straw-tailed Whydah." It is not clear what benefit is derived from such cumbersome appellations which have no actual usage.

Chappellier, Albert A Contribution to the Study of Hybridism in Birds. (Suppl. Bull. Biol. France et Belg. IV. 1921.) [In French.]

CORRESPONDENCE

Generic Subdivision.

Editor of 'THE AUK:'

The following statement was circulated with the covering letter which precedes it, amongst the leading systematic research workers of the A. O. U, with the exception of the members of the Committee on Nomenclature for whose information the expression of opinion was solicited. The widespread desire for a generously appreciable value to the generic unit and of providing for finer classification by a liberal use of subgenera is very apparent.

While everyone whose name appears, has approved the principles proposed some have made minor reservations and suggested alteration of phraseology all of which are indicated so that the statement as it stands is an exact reflection of current opinion in this country.

P. A. TAVERNER.

Ottawa, Ont., Jan. 18th, 1922.

Dear Sir:—

Many view with alarm the present tendency towards minute division of the genus. It promises to complicate nomenclature and taxonomy until each group becomes the private preserve of individual specialists who alone have time to follow its intricacies within their narrowed field. It is making a large part of our literature obsolete in terminology and raising difficulties in the way of both present and future students, some of whom think that there is something more to do in zoology than the making or learning of names. It has had another effect, more subtle but perhaps of even greater danger to ornithology. It discourages the dilettante. This cuts off the supply of future ornithologists at its source and deprives the serious student of the sympathetic interest and assistance of the general public. Investigators cannot live long in the rarified atmosphere of pure science regardless of the temperament of the community below

that furnishes support or encouragement. We are feeling this more every day.

It is recognized that there is no limit to knowledge and that advancement must continually be made. That new light is constantly being thrown upon the relationship of species is recognized and our taxonomy must show many readjustments. If the method under criticism were the only way of accomplishing this there would be no question as to the proper procedure for truth must stand before all things in science. If, however, there is a way of expressing the utmost refinements of classification without this very evident confusion is it not the course of wisdom and to the benefit of science to follow it?

While it is admittedly impossible to formulate an exact definition of such an elusive concept as a genus or to enforce its acceptance when formulated, it does seem that principles might be formed that may at least discourage extreme departures from a generalized ideal.

In informally discussing the subject with a number of leaders in American ornithological thought it was evident that there is an appreciable body of opinion favourable to these views yet that opinion has been nearly voiceless and, judging by current literature, our Committee on Nomenclature and the general public both at home and abroad might be justified in concluding that the practice met with general approval. Such protests as have been made have been received with the silence that may indicate either disapproval or consent.

In order therefore that an opinion on the subject may be expressed the writer has taken the liberty of preparing what seems to him a fair and restrained presentation of the case. He proposes to circulate it amongst the leading ornithologists of both schools, requesting an expression of opinion. It may then be presented for the guidance of our Committee on Nomenclature in their revision of the 'Check List,' published as a symposium, or both.

It is suggested that this is a matter in which the younger men are especially interested. It raises a question of pure expediency, not of science, and they are equally as capable of judging it as the oldest and grayest systematist. Those who in the future will use the tools now being forged are certainly entitled to as much voice in their construction as those who are nearing the time when they will drop them forever.

I would therefore request you to read the inclosed carefully, attach any opinion you may form on it and return to the writer with the above objects in view. If you have nothing to add or subtract from the inclosure a signature at the bottom will suffice.

Sincerely,

(Sgd.) P. A. Taverner.

Victoria Memorial Museum,
Ottawa, Ont.

The Genus Debased.

The Genus has two objects in our current usage. One is nomenclatural, the other taxonomic.

In Nomenclature it forms a part of the name of the species and by indicating a group of which the species named is a member, assists in recalling its general position in our classification. This, when the groups are sufficiently generalized, it does very well indeed.

In Taxonomy, it is a group of species bearing a certain more or less fundamental degree of resemblance to each other and distinct from other similar groups. It endeavours to express a natural relationship based upon common evolutionary descent. This, due to the incompleteness[1] of our knowledge, is[2] very imperfectly accomplished.

Whatever[3] the theory may be, in practice the genus is little more than an arbitrary grouping for convenience. It has no demonstrable foundation in fact. Its value relative to the family on one hand and the species on the other is purely conventional, and is a matter of expediency and not of scientific fact.

It is undeniable that the value of the genus has been consistently[4] and progressively lowered since it was first established. The original Linnaean genus was but little less than the family as recognized today and we have debased it until tomorrow it promises to be but little more than a species.[5] When a[6] large number of genera become monotypic the advantage of the binomial system is lost and the principles of its inventor ignored. In fact in such cases the generic name might almost as well be abandoned altogether for all the assistance it offers in placing a species within our system of classification

The spirit of the binomial system is broken if not the letter. That some species are less closely related than we formerly supposed is an important fact and should not be lost sight of, but it does not seem that the creation of a large number of small or monotypic genera is the only or the best way of commemorating it. The chief result of such a course is the degradation of the genus and the complication of nomenclature. It obscures the larger more important facts of likeness behind a multitude of smaller less important ones of dissimilarity.

---

[1] "It is the completeness of our knowledge that makes generic treatment difficult,"—remark by Frank M. Chapman.

[2] "sometimes" inserted by Frank M. Chapman.

[3] This paragraph deleted by W. deW. Miller, James P. Chapin and Frank M. Chapman. The following alternate paragraph offered by Miller and Chapin,—

"In theory the genus is a group intermediate between the species and the subfamily. As it approaches one or the other of these in comprehensiveness, its usefulness diminishes. Its exact limits must usually be a matter of personal opinion, but expediency forbids reducing it nearly to the value of a single species, unless this species be extremely divergent from any of its allies."

[4] "Inconsistently" offered in place of "consistently" by Frank M. Chapman.

[5] Omit from here to end of first sentence in next paragraph,—C. Hart Merriam.

[6] "Very" inserted by W. deW. Miller.

However the current lowering of generic value may permit of the expression of finer relationship, it certainly is not in the direction of simplicity or convenience but promises in time to involve us in a maze of words and to reduce ornithology to a study of language not of birds. The question is, is it wise to persist in this direction when other ways are open?

It is obvious that different workers require different scales of measurement. The carpenter works to an eighth of an inch, the cabinet maker to a sixty-fourth, whilst the optician measures to one ten-thousandth. In the same way the zoological specialist requires a much finer scale of measurement than the generalist, but it is no more advisable to involve the latter in the minute refinements of the former than it is to insist on the carpenter using the same measurement units as the maker of optical instruments.

When we discovered that species were not fine enough taxonomic units to expresss all our facts we did not lower the value of the species, or if we did we quickly corrected our error, but we turned to the subspecies for finer definitions. In doing so we may have broken the letter of the binomial system but we did keep its spirit. Is not this case of the genus a parallel case? Why cannot we agree to allow the genus a substantial and easily appreciated value and express the finer divisions demanded by the specialist in subgenera? The fact that the sub-generic name may or may not be used in specific nomenclature at the discretion or need of the individual worker gives a flexibility that should satisfy all requirements. We can have a simple nomenclature for the generalizer and yet possibilities of the utmost refinement for the specialist without confusion to either.

Signatures.

R. M. Anderson	J. Eugene Law
Outram Bangs	F. A. Lucas
A. C. Bent	Joseph Mailliard
L. B. Bishop	*W. deW. Miller
*James P. Chapin	Loye Miller
*Frank M. Chapman	Robert Cushman Murphy
W. Lee Chambers	*C. Hart Merriam
Donald R. Dickey	John Treadwell Nichols
Barton Warren Evermann	Chas. H. Rogers
J. Grinnell	A. Van Rossem
Ludlow Griscom	Guy C. Rich
A. B. Howell	H. S. Swarth
Lawrence M. Huey	Tracy I. Storer
C. E. Hellmayr	W. E. Clyde Todd.

Wilfred H. Osgood and Richard C. McGregor expressed approval of the sentiments and referred to their published statements on the subject, but did not sign.[1]

---

* Exceptions taken or suggestions or amendments offered over these signatures, as expressed in the footnotes.

[1]Revision of the Genus Peromyscus, by W. H. Osgood, N. Am. Fauna No. 28, pp. 24–26, and Genera and Species by Richard McGregor, Condor XXIII, pp. 127–129, July, 1921.

The Cuckoo's Egg Laying.

Editor of 'THE AUK:'

Dear Sir,

In your review of my book 'The Cuckoo's Secret' on pages 432–433 of 'The Auk,' July 1922, you state—

"The Cuckoo's exact method of depositing her egg seems not to have been even yet positively ascertained" and you proceed to place the theories of Mr. Stuart Baker, supported by no personal field work or observations whatever, vis-a-vis the proven facts of my own observations of several Meadow Pipit Cuckoos which have been carefully witnessed and confirmed by a score of well-known competent observers.

In opposition to my observations Mr. Stuart Baker at first considered that my film endorsed his, and the popular belief, that the Cuckoo always holds her egg in her beak, or even in her gullet, regurgitating it into the chosen fosterer's nest, of course having first of all laid it on the ground or some other convenient place.

At a meeting of the Oölogical Society held in Great Portland Street, London, on March 15th. last, when Mr. Stuart Baker's paper was discussed in the presence of over sixty members, Mr. Baker eventually withdrew his contention and unreservedly admitted that he was now fully convinced that the Cuckoo in my film actually laid her eggs in the nests of the Meadow Pipit fosterers. On account of the world-wide interest in the parasitic habits of the Cuckoo I consider that a report of this meeting should have been published.

I do not wish to dogmatise, nor do I claim, or have I ever done so, that I have solved all Cuckoo problems. In respect of the Cuckoo's method of egg deposition I have so far only *proved beyond dispute* that Meadow Pipit Cuckoos actually sit on the fosterers' nests and lay their eggs into these nests. At the same time I consider that it will eventually be found and proved that all Cuckoos deposit their eggs direct from the oviduct into the nests of their dupes, even when such nests are domed or concealed in very small holes. I am convinced that it would be just as easy for a Cuckoo to cling round the nest and lay her egg through the entrance hole as to place it there with her beak.

You will I know pardon me for saying so, but had your reviewer carefully examined my book he could not possibly have accepted Mr. Stuart Baker's interpretation of the Cuckoo's procedure after reading pages 160–161 of 'The Cuckoo's Secret.'

Capt. Oliver Pike, F. R. P. S., F. Z. S. has been several weeks with me this year (1922) and I cannnot do better than enclose herewith an article he wrote for 'The Daily Mail' and which was published therein on the 12th July last. I have since seen his film and no one who sees it will ever again question the accuracy of his and my statements in respect to that particular Cuckoo's method of laying her egg.

For your further information I enclose herewith copy of an article which is appearing this week in 'The Graphic.' The Cuckoo which Mr. Pike photographed this year is the same bird as Cuckoo 'A' mentioned in 'The Cuckoo's Secret;' she therefore returned for a fifth season, and this year, besides being filmed by Capt. Pike, was subjected to similar treatment on two laying days by Mr. H. M. Lomas, on behalf of British Instructional Films, using a Debret ultra-rapid camera. These two films will probably be combined and issued as a complete film for distribution amongst the British picture houses in the spring of next year.

For your information, this particular Cuckoo this year set up a fresh world's record by laying no less than 25 eggs all but one of which were actually seen laid and in the majority of cases I correctly forecasted days in advance the actual nest in which the next egg would be laid. A report of this year's proceedings is likely to appear at a later date in one of the British ornithological journals.

Yours faithfully,

EDGAR CHANCE.

[We are perfectly willing to accept the accuracy of Mr. Chance's demonstration. In our position of reviewer, however, we felt bound to give place to Mr. Stuart Baker's statements after he had seen Mr. Chance's film, especially as they were so prominently published. We fully agree with Mr. Chance that Mr. Baker's change of view should have been given the same publicity as his original statements, in which case we should not have referred to them at all.—Ed.]

NOTES AND NEWS

IN STARTING upon a new year it is customary to look forward rather than backward, to make promises for the future and forget the failures of the past, but in the present case the Editor feels that some word of explanation is due the members of the Union and subscribers to 'The Auk' for many shortcomings during the past year,

Ever since the beginning the Editors and Managers of this journal have been busy men, whose time has been fully occupied with other duties, so that the editing and management of the magazine have, of necessity, been performed in evenings or such other spare moments as they may have had at their disposal. This fact is apparently not generally understood. The increase in the size of the journal with the inevitable additional correspondence has made it increasingly difficult to keep up to date with the editorial work.

During the past year illness and a combination of circumstances greatly increased these difficulties in the case of the present Editor with the result that much correspondence has remained unanswered and the revues

have been seriously curtailed. The Editor deeply appreciates the forbearance of contributors and subscribers during this period and hopes that with the next issue all delinquencies will be met and the review of literature brought up to date. This has already been accomplished in the present number, with the exception of some European bird journals.

With the publication office in Lancaster, and the editor's office in Philadelphia, delays in transit between the two, especially about the first of the year, cause complications which we are powerless to control, and the effect of unrest in the publishing business is still very evident.

In planning for the future certain action seems absolutely necessary.

1. To consider no papers or reports for publication that are not in the Editor's hands at least six weeks before the appearance of the number in which they are to appear.

2. To accept no paper over twenty printed pages in length.

3. To insist that contributors of "General Notes" shall study the style of the notes, as published in 'The Auk' and make their manuscripts conform to it. At present they often come buried in a letter and in all sorts of form so that many hours of editorial time are consumed in rewriting them for the printer.

4. To insist that writers of lists place the scientific name first with the English name following and use a serial set of numbers beginning with 1, not the numbers of the A. O. U. or any other Check-List. Numbers however are really not necessary.

5. To request the writer of either leading article or note to be as brief as possible without omitting matter of importance. A careful re-reading of a rough manuscript will often result in the discovery of some verbiage, the omission of which will make the final copy not only more forceful but better literature.

THE BUSINESS management of 'The Auk' for the past two years under the direction of the Editor has been taken over by the Treasurer, Mr. W. L. McAtee, and dues, subscriptions, etc., should now be sent to him at 200 Cedar St., Maywood, via Cherrydale, Arlington Co., Va.

All articles for publication, etc., or requests for separates to the Editor, Academy of Natural Science, Philadelphia, as heretofore.

CHARLES MORELAND CARTER, an Associate of the A. O. U. since 1920, died at his home in St. Joseph, Missouri, September 1, 1922, and was buried at Mount Mora in that city.

He was born in Cambridge, Mass., September 22, 1852. His father was Robert Carter a well known journalist, correspondent and editor, successively, of leading papers in Washington and New York, and author of 'A Summer Cruise on the Coast of New England,' the first edition of which was published in 1864. He was also an intimate friend of James Russel Lowell, Oliver Wendell Homes and other literati. Mr. Carter's mother, who died when he was eleven years old, was an artist and author

of children's books and his step-mother was for twenty years at the head of the Art Department of the Peter Cooper Union.

Young Carter had strong artistic gifts and at one time thought of making this his profession, and many an evening was spent in drawing Game Birds, and copies which he made of Woodcock, Ruffed Grouse and other species are now prized by his friends who hunted with him in the early 70's.

About 1875, Carter went to Nebraska and engaged in the railroad business and later was transferred to Dubuque, Iowa, where he married Ada P. Hunter, May 15, 1879, and in 1889 removed to St. Joseph, Mo., where he remained during the rest of his life as Assistant Treasurer of the Chicago, Burlington and Quincy System, and director and treasurer of the St. Joseph Union Depot Co.

Mr. Carter was not technically an ornithologist, but had a deep interest in the subject. As a true and eager sportsman he had no rival, and devoted his spare time to field sports all over the western country where game was then in great abundance. No one was better posted on the habits of our game birds.

He was a man of broad culture and of unimpeachable integrity of character, and of a peculiarly loving disposition. He never forgot his early friendships which remained life long.

In 1919 he published, and had privately printed a brochure 'Shooting in the Early Days,' relating his experiences with dog and gun in a series of interesting chapters.

When living in Dubuque, Iowa, from 1877 to 1880, he speaks of the hundreds of Passenger Pigeons, which he frequently saw in the tall woods on the islands of the Mississippi, yet they gradually grew scarcer and scarcer until 1880, when few were to be seen.

Besides his widow, Mr. Carter is survived by three daughters.—R. D.

George Zenker.—Friends of natural science will be sorry to hear of the death of George Zenker at Bipindi, Cameroon, West Africa, on February 12, 1922. Zenker was born June 2, 1855, at Leipzig, Germany where he was educated at the Leipzig Gymnasium. He specialized in agriculture and botany and after graduation continued his botanical interest along with position as florist in several cities in Germany and later as Director of the Botanical Gardens in Naples, Italy. While at Naples he married Miss Serafina Maih, whom death took from him after a few months of married life.

In 1886 he made his first trip from Italy to Africa in a sail boat. He was sent from Italy to Congo and later to Gaboon to collect botanical specimens. In 1889 he went to Cameroon when the Germans were just making ready an expedition into the interior and he joined the company of four who fought their way up to Jaunde. The other Europeans returned to Douala and left Zenker to build the station at Jaunde. During six years off hardship, fighting and danger from the then savage natives he began collecting general scientific material.

In 1896 Zenker left the government service to start a plantation of his own at Bipindi, known as Bipindihaf, where he developed a wonderful cocoa and rubber plantation, all the while sending new and rare specimens of natural science to the Berlin Museum where his collections are preserved. Many botanical specimens as well as specimens of mammals, birds, butterflies and other insects bear the name *zenkeri*.*

His death came as a surprise. While he was getting along in years, 67 being a good age for a life spent on the West Coast of Africa, he was known up and down the country as a young old man. His place at Bipindi was a typical European country home. The verandas were always decorated with interesting plants and the interior of the house with paintings which he himself painted. The mysterious room was the one where he kept his literature and newspapers, a jumble to be sure, but not for him. If there was an argument to be settled, a specimen to be identified, Zenker would disappear for a few moments into that sanctum sanctorum and come out with the literature necessary to prove his side.

Natural Science has lost a valuable man in the death of George Zenker. —Jacob A. Reis, Jr. Edea, Cameroon, West Africa.

At the recent meeting of the A. O. U., the Inland Bird-Banding Association was organized to carry on this line of bird study in the Mississippi Valley and other inland states and Canada. The Association is soliciting members and those interested living within this district should communicate with the secretary.

The officers are S. Prentiss Baldwin, President; Prof. Leon, J. Cole, Vice-President, Wm. I. Lyon, Waukegan, Ill., Secretary and Herbert L. Stoddard, Treasurer.

The Houghton, Mifflin Company announce the early appearance of the first volume of 'A Natural History of the Ducks,' by Dr. John C. Phillips. All of the species of the world will be treated numbering 155 with many geographical races and there will be numerous colored plates and others in black and white. The artists are Allan Brooks, Louis Agassiz Fuertes and Frank W. Benson. The work will be quarto, 9¾ by 12⅝ and will be complete in four volumes. The price of Volume I is $50.

The Carnegie Museum of Pittsburgh is about to issue the 'Birds of Santa Marta' by Mr. W. E. Clyde Todd and M. A. Carriker, a comprehensive treatise on the avifauna of this region upon which the authors have been at work for many years. It is in a great part complementary to Dr. Chapman's 'Bird Life of Colombia' in which the Santa Marta region was purposely omitted owing to the fact that the present report was nearly finished.

* Among the birds named in his honor are: *Accipiter zenkeri*, *Agapornis zenkeri*, *Macrosphenus zenkeri*, *Melignomon zenkeri*, *Stigorhinus zenkeri*, and *Turacus zenkeri*, all described by Reichenow from Cameroon. A genus of flying squirrels, *Zenkerella*, described by Matschie, also bears his name. The large Gorilla in the Academy of Natural Science of Philadelphia was collected by him.—T. S. P.

'The Auk' has been favored with an advance copy for review but unfortunately it arrived too late for an adequate notice in this issue so that a detailed account of the volume must be deferred until April.

Some Notes from the Records of the New England Bird Banding Association.—The members of the New England Bird Banding Association have sent in records of 4,000 to 5,000 birds banded during 1922. This number would undoubtedly have been multiplied several times had it not been for the lack of bands, as practically none were received between June and November. Ninety-five species have been banded. The Song Sparrow heads the list with 542, the next largest number is for the Robin, 219, with the Chipping Sparrow a close third with 183. Black-crowned Night Herons, Roseate Terns, Purple Finches and White-throated Sparrows number about 150 each; Tree Sparrows and Barn Swallows about 100 each. Some of the more uncommon species successfully banded are Petrels, Scaup Duck, Woodcock, Spotted Sandpiper, Semi-palmated Plover, Hummingbird, Wood Pewee, Prairie Horned Lark, Henslow's Sparrow, Grasshopper Sparrow, White-crowned Sparrow, Sharp-tailed Sparrow, Blue-headed Vireo, Magnolia Warbler, Brown Creeper, Blue-winged Warbler and Ruby-crowned Kinglet.

Mr. Aaron C. Bagg, of Holyoke, Mass., banded the first bird for the Association, a Chickadee, on January 29, and he banded the first migrating Song Sparrow March 9, at 4:30 P. M., three hours after it appeared on his grounds. Mr. and Mrs. Bagg have banded over 300 birds.

The following history of a Song Sparrow banded at Cohasset, Mass. by Mr. Laurence B. Fletcher will show the importance of recording repeats: (taken from Circular No. 3, U. S. Biological Survey).

No. 11006, Song Sparrow,	Banded May 28, 1921,	3:15 P. M.
Repeats, 1921	" 31,	12 Noon
"	June 5,	7 P. M.
"	" 6,	11 A. M.
"	" 7,	4 P. M.
"	" 16,	4 P. M.
Return, 1922	May 13, 1922	3 P. M.
Repeats, 1922	" 16,	11 A. M.
"	" 16,	4 P. M.
"	July 5,	5 P. M.
"	" 13,	8 A. M.
"	" 22,	2 P. M.
"	" 26,	11 A. M.
"	" 29,	8 A. M.
"	Aug. 10,	3 P. M.

What became of No. 11006 after June 16, 1921, and where did it go on May 16, 1922, after it had returned three days previously? What was it doing in the period from May 16 to July 5? At present these questions are puzzling, but with persistent work such details will ultimately be worked out.

Mrs. W. H. Herrick, of Topsfield, Mass., traps her birds in an ordinary bird cage, made so that the perch will break when a bird alights, thus closing the door. This trap is on the roof of a piazza under her bedroom window. She trapped and banded 43 Evening Grosbeaks last spring, and three of these were in the cage at one time. The last one was banded May 8. She has also trapped and banded, among other birds, 119 adult Purple Finches. One Purple Finch, after trapping himself, mounted the upper perch and burst into song.

Hon. Herbert Parker, of Lancaster, Mass., the latter part of last winter banded 30 Tree Sparrows, 19 Fox and 18 Song Sparrows. The Tree and Song Sparrows repeated, but none of the Fox Sparrows did so. In April and May, 22 White-throats were banded, but none of these repeated, except one which came at 8 in the morning and repeated again at 6:30 at night. In October, Mr. Parker banded a White-crowned Sparrow, young of the year, and some Fox Sparrows, and of these he had three Fox Sparrows repeat in November.

William E. Smith, of South Chatham, Mass., banded over 100 Common and Roseate Terns, fledglings,—and while on a trip to New Brunswick on the steamer Governor Dingley, he banded a Song Sparrow which flew on board when the boat was 30 miles off Portland, Maine, and released it next day at Lubec, Maine.

Miss Bertha E. Brown, of Bangor, Maine, in reporting the banding of a Chipping Sparrow, said that when she opened her hand to release the bird he would not fly, but lay quietly on her outstretched hand. This continued so long that she became tired and sat down. When she looked at her watch, she found that the sparrow had remained five minutes longer before deciding to fly away.

Mr. I. H. Johnston, of Charleston, West Virginia, banded a Song Sparrow which repeated fifteen times in July. A House Wren, nesting in a gourd on his estate, was caught by a hoop and net hand-trap placed over the opening.

Mr. R. J. Middleton, Jeffersonville, Pa., noted that when he banded Song Sparrow 12420 on May 6 it had no tail, but when it repeated on June 1, the tail was fully grown.

During the spring migration Mr. L. R. Talbot, President of the Brookline Bird Club, went to Mr. Baldwin's place in Thomasville, Ga., and banded over 300 birds, besides noting returns and repeats, and made a record of handling about 1850 birds.

Mr. O. R. Robbins, of Pleasant Lake, Nova Scotia, banded two Herring Gulls. He put out fish and lobster as bait on the shore, and when the Gulls began to eat, threw a fish net over them.

While on a vacation at Unity, Maine, Mr. Arthur W. Taylor, of Salem, Mass., banded a female Wood Pewee and two young. The mother bird was so tame that she fed the young birds as they sat on Mr. Taylor's knee.

Mr. L. B. Fletcher, of Cohasset, banded a Red-winged Black-bird (male) in August, 1922. The next day this bird appeared at the trap with a

female and four fledglings. After leading them around the trap several times, the female and four young went under the trap, were taken and banded. In the twenty years Mr. Fletcher has lived there he had never observed Red-winged Blackbirds on his lawn where the trap is operated until regular feeding was established.

Mrs. Alice B. Pratt, of Middleboro, Mass., used a pull string trap on the beach at Marion, and caught and banded two Spotted Sandpipers and two Semipalmated Plovers.

A large snake was found swallowing a fledgling Song Sparrow, and had got both legs down, when Mr. George H. Priest, of Brockton, Mass., rescued the sparrow and afterwards banded it.

Birds were banded by other Members as follows: Leach's Petrels (43), Prof. Alfred O. Gross, Brunswick, Me.; Roseate Terns (Forty-nine young), at Chatham, Mass. and 61 Cliff Swallows in Sweden, Me., Henry E. Childs, of Providence, R. I.

Purple Finches (19), Mrs. W. K. Harrington, Norwalk, Conn.

Song Sparrows (65), Sydney Harris, Vineyard Haven, Mass.

Redstart, male, flew into back kitchen, and was banded by Miss Inez Addie Howe, St. Johnsbury, Vt.

Lincoln's Sparrows were banded by Mrs. H. S. Miller, Racine, Wisconsin, and also by Rev. George E. Allen, Plainfield, Mass.

White-crowned Sparrow, Mr. William P. Wharton, Groton, Mass.

Vesper Sparrow, Mr. and Mrs. H. G. Sargent, Manchester, N. H.

Miss Elizabeth Dickens, Block Island, R. I., took Prairie Horned Larks in her trap and also Spotted Sandpipers.

Dr. Charles W. Townsend, of Boston, banded young Black-crowned Night Herons in an Ipswich Heronry.

At Fairfield, Conn., Prof. A. A. Saunders banded two Blue-winged Warblers and a Cowbird in the same nest.

On an expedition through Essex County, Mass., Messrs. Whittle, Fletcher and Floyd banded 43 young Barn Swallows.

Fox, Song and Tree Sparrows (70) in March and April, Mr. Frank Novak, Fairfield, Conn.

Over 200 birds of several species were banded by Miss Kathleen Hempel, of Elkader, Iowa,—and she had several Chickadee returns from some she banded in 1921. These were trapped mostly in her dooryard.

Returns: At Sandwich, Cape Cod, Mass., a Junco was banded, March 31, by Mrs. George H. Burbank. On April 26, a cat brought in this bird in Buckland, in the extreme western part of the same state.

Mr. R. E. Horsey, of Rochester, N. Y., reported that Common Tern, No. 104872, was found August 13, at Stop 22, Manitou Line, near Rochester alive, but it soon died. The bird was banded by Edwin Beaupre, near Kingston, Ontario.

On June 17, Messrs. Fletcher, Floyd and Mackaye banded 104 Black-crowned Night Herons (fledglings) at Sandy Neck, West Barnstable

Mass. Three of these banded birds were heard from later in the summer. The first, August 7, at Kennebunkport, Me., about 120 miles north of Sandy Neck; the second, August 20, at Fryeburg, Maine, 200 miles north of Cape Cod and well inland; while the third was picked up September 4, near Marblehead, Mass., about 60 miles north from its place of banding.

Black-crowned Night Heron 201635, banded by Mr. S. G. Emilio at Ipswich Beach, July 30, was found injured at North Andover, on September 25. This town is about 20 miles west of Ipswich.

Mr. J. Howard Edwards, of Boston, shot nine banded Black Ducks, among others, at Tunk Pond, Maine, November 6 and 7. These birds were banded by Joseph Pulitzer, of Bar Harbor, Maine.

Black Duck, No. 10505, banded by Mr. Robie W. Tufts, Wolfville, Nova Scotia, June 21, at Seal Island, was killed at Goose Bay, Yarmouth Co., N. S., November 8.

A Bronzed Grackle, banded September 11, by Mr. Charles B. Floyd, Auburndale, Mass., was founded wounded at Elizabeth, N. J., November 7. Later it recovered and flew away with others of its kind.

Professor W. C. Vinal of Providence, R. I., banded a Flicker at Wellfleet. Mass. This bird was found dead in a chimney of a closed summer cottage, November 5, at North Eastham, Mass.

At Holyoke, Mass., Mr. A. C. Bagg trapped a Tree Sparrow, on December 3, which had been banded on February 11, last. It had entered the trap last winter thirteen times, the last date being March 24.

Compiled by Alice B. Harrington,
Recording Secretary.

With the wide spread interest in bird study and the broad knowledge of the subject possessed today by the reading public one would suppose that the editors of our magazines and newspapers would be alive to the importance of treating their scientific publications with the same care and regard for accuracy that characterizes articles dealing with other subjects, but we still find articles which are either downright amusing or published with utter disregard for the evidence demanded in the presentation of scientific matter which is to be given any serious consideration whatever. Men and women well informed on ornithology are to be met on every hand today and why their assistance at least in an advisory capacity is not made use of by our editors it is hard to understand.

In the 'Chicago Evening American' for December 4, 1922, there appears in the editorial column under the caption "What is going on" a glowing account of the wonderful southward night migration of Tanagers, Thrushes, Vireos, Orioles, etc. which the writer states was then in progress although as a matter of fact the temperature at Chicago was barely ten degrees above zero with a 32 mile gale of wind blowing at the time, and the migrating host which is described had passed some three months before. The writer evidently got his inspiration from an article in some other paper which had been published at a more seasonable date.

In the September issue of 'Scribner's Magazine,' also in the editorial columns, is an article dealing with "consistency" in which is a casual statement that the writer had observed, a year before, the mating of a Robin and a Brown Thrasher which was "attended with complete success." The young he adds were duly hatched and "both parents showed the customary devotion to their brood."

A mating such as this between birds of such different families, has not so far as we are aware been recorded, certainly no hybrid between a Robin and Thrasher has ever been seen or described. Anyone with the slightest scientific knowledge would know that a discovery such as this warranted the most detailed study and record, yet here it is allowed to rest for a year only to be mentioned casually, in a literary magazine.

There is often a wide difference between what we see and what we think we see and inference often plays a part in such a case. That a reputable magazine should publish such a statement without corroborative data is the point that surprises us.

In a number of the copies of the October Auk, the plates were blurred and others were printed, which are enclosed herewith.